

**PUBLIC NOTICE**  
**LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY (LDEQ)**  
**RIVER BIRCH, INC., RIVER BIRCH LANDFILL**

**PUBLIC HEARING AND REQUEST FOR PUBLIC COMMENT**  
**ON A TECHNICALLY COMPLETE SOLID WASTE PERMIT RENEWAL APPLICATION**  
**AND THE ASSOCIATED ENVIRONMENTAL ASSESSMENT STATEMENT (EAS)**

The LDEQ, Office of Environmental Services, will conduct a public hearing to receive comments on a technically complete solid waste permit renewal application and the associated environmental assessment statement for River Birch, Inc., 2000 South Kenner Avenue, Avondale, Louisiana 70094 for the River Birch Landfill. **The facility is located at 2000 South Kenner Road, Avondale, approximately one mile from Waggaman, Jefferson Parish.**

**The hearing will be held on Thursday, June 12, 2008, beginning at 6:00 p.m., at the Waggaman Playground Gym, Meeting Room 101, 516 Dandelion Drive, Waggaman, LA.** During the hearing, all interested persons will have an opportunity to comment on the technically complete application.

River Birch, Inc. requested to renew their Technically Complete Solid Waste Permit for their Type I / Type II landfill, allowing for the disposal of Industrial, Commercial and Residential Solid Waste.

Written comments or written requests for notification of the final permit decision regarding this permit may also be submitted to Ms. Soumaya Ghosn at LDEQ, Public Participation Group, P.O. Box 4313, Baton Rouge, LA 70821-4313. **Written comments and/or written requests for notification must be received by 12:30 p.m., Monday, July 14, 2008.** Written comments will be considered prior to a final permit decision.

LDEQ will send notification of the final permit decision to the applicant and to each person who has submitted written comments or a written request for notification of the final decision.

The Technically Complete Solid Waste Permit Renewal Application and the associated Environmental Assessment Statement are available for review at the LDEQ, Public Records Center, Room 127, 602 North 5<sup>th</sup> Street, Baton Rouge, LA. Viewing hours are from 8:00 a.m. to 4:30 p.m., Monday through Friday (except holidays). **The available information can also be accessed electronically on the Electronic Document Management System (EDMS) on the DEQ public website at [www.deq.louisiana.gov](http://www.deq.louisiana.gov).**

Additional copies may be reviewed at the Jefferson Parish Library, Live Oak Branch, 125 Acadia Drive, Waggaman, LA 70094 and at the Jefferson Parish Council Office, 200 Derbigny Street, 6<sup>th</sup> Floor, Gretna, LA 70053-5850. Another copy is at the LDEQ Southeast Regional Office, 201 Evans Road, Building 4, Suite 420, New Orleans, LA 70123-5230.

Previous notices have been published in The Advocate and The Times Picayune on Saturday, December 24, 2005.

Individuals with a disability, who need an accommodation in order to participate in the public hearing, should contact Laura Ambeau at the above address or by phone at (225) 219-3277.

Inquiries or requests for additional information regarding this permit action should be directed to Jesse Deroche, LDEQ, Waste Permits Division, P.O. Box 4313, Baton Rouge, LA 70821-4313, phone (225) 219-3065.

Persons wishing to be included on the LDEQ permit public notice mailing list or for other public participation related questions should contact the Public Participation Group in writing at LDEQ, P.O. Box 4313, Baton Rouge, LA 70821-4313, by email at [deqmaillistrequest@la.gov](mailto:deqmaillistrequest@la.gov) or contact the LDEQ Customer Service Center at (225) 219-LDEQ (219-5337).

**Permit public notices including electronic access to general information from the technically complete solid waste permit application** can be viewed at the LDEQ permits public notice webpage at [www.deq.louisiana.gov/apps/pubNotice/default.asp](http://www.deq.louisiana.gov/apps/pubNotice/default.asp) and general information related to the public participation in permitting activities can be viewed at [www.deq.louisiana.gov/portal/tabid/2198/Default.aspx](http://www.deq.louisiana.gov/portal/tabid/2198/Default.aspx).

Alternatively, individuals may elect to receive the permit public notices via email by subscribing to the LDEQ permits public notice List Server at [www.doe.louisiana.gov/oes/listservpage/ldeq\\_pn\\_listserv.htm](http://www.doe.louisiana.gov/oes/listservpage/ldeq_pn_listserv.htm)

**All correspondence should specify AI Number 32219, Permit Number P-0321R1, and Activity Number PER20050002.**

**Scheduled Publication Date: May 16, 2008**

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**All correspondence should specify AI Number 32219, Permit Number P-0321R1, and Activity Number PER20050002.**

**Scheduled Publication Date: May 16, 2008**

BOBBY JINDAL  
GOVERNOR



HAROLD LEGGETT, Ph.D.  
SECRETARY

**State of Louisiana**  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
ENVIRONMENTAL SERVICES

Certified Mail 7003 2260 0005 9324 1859

Mr. A.J. Ward, Jr.  
River Birch Landfill  
P.O. Box 1938  
Gretna, Louisiana 70054

MAY 07 2008

RE: Technically Complete Determination  
Solid Waste Permit Renewal Application  
AI #32219/D-051-6741/P-0321  
Jefferson Parish PER 20050002

Dear Mr. Ward:

We are in receipt of the finalized copies of your permit application dated March 6, 2007, and the additional information package dated April 21, 2008. The additional information submitted separately has been inserted into the final copy of the permit application. After review of these documents, we have determined that your application is technically complete and prepared for public review.

The Environmental Assistance Division will distribute copies of your application for public review and place public notices in the appropriate newspapers in accordance with LAC 33:VII.513.F.3. Please contact Ms. Soumaya Ghosn at (225) 219-3276 for the date of publication and the dates for the comment period. At the conclusion of the comment period, we will consider all comments and render a permit decision regarding your application.

Please continue to reference your Agency Interest (AI# 32219), Permit Activity Number (PER20050002), and Facility Identification Number (D-051-6741) on all future correspondence regarding this matter. If you have any questions, please contact Jesse Deroche of the Waste Permits Division at (225) 219-3065.

Sincerely,

A handwritten signature in black ink, appearing to read "Bijan Sharafkhani".

Bijan Sharafkhani, P.E.  
Administrator  
Waste Permits Division

jd

c: Southeast Regional Office

STATE OF LOUISIANA  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
OFFICE OF ENVIRONMENTAL AFFAIRS  
SOLID WASTE DIVISION  
PERMITS SECTION

**PERMIT RENEWAL APPLICATION**

**FOR**

**RIVER BIRCH LANDFILL**

**D-051-6 741/P-0321**  
**AIN 32219**

PREPARED BY:



---

PAUL L. MIERS ENGINEERING, LLC

SUBMITTED FOR:

**RIVER BIRCH, INC.**

**VOLUME I of IV**

June 13, 2005  
Revised: March 2007

**RECEIVED**

MAR 06 2007

**LDEQ**

**VOLUME I**

**SECTION I**

**Table of Contents**

TABLE OF CONTENTS  
for  
PERMIT RENEWAL APPLICATION  
for  
RIVER BIRCH LANDFILL  
D-051-6741/P-0321  
AIN 32219

**VOLUME I**

SUBMITTAL LETTER

SECTION I	TABLE OF CONTENTS
SECTION II	EXISTING PERMIT DOCUMENTS
SECTION III	RESPONSE TO LAC 33:VII-REGULATIONS

PART I - LAC 33:VII.519

PART II - LAC 33:VII.521

A.	LAC 33:VII.521.A	LOCATION CHARACTERISTICS
1.	A.1.a	Area Master Plans ..... 1
1.	A.1.b.	Access Road Adequacy ..... 2
2.	A.1.c.	Existing Land Use ..... 3
3.	A.1.d.	Aerial Photograph..... 4
4.	A.1.e.i.	List of Sensitive Ecologic Areas..... 5
5.	A.1.e.ii.	Documentation from Agencies..... 6
6.	A.1.e.iii.	Measures Planned to Protect Areas ..... 7
7.	A.1.f.	Wetlands Demonstration ..... 8
8.	A.1.g.	Demographic Information ..... 9
9.	A.2.a	Wells ..... 10
10.	A.2.b.i.	Faults ..... 11
11.	A.2.b.ii.	Fault set-back Distance..... 12
12.	A.2.c.	Utilities..... 13
B.	LAC 33:VII.521.B.	FACILITY CHARACTERISTICS
1.	B.1.a.	Elements of Disposal System ..... 14
2.	B.1.b.	Perimeter Barrier..... 15
3.	B.1.c.	Buffer Zone ..... 16
4.	B.1.d.	Fire-Protection Measures ..... 17



5.	B.1.e.	Landscaping .....	18
6.	B.1.f.	Devices to Monitor Incoming Waste .....	19
7.	B.1.g.	NPDES Discharge Points .....	20
8.	B.1.h.	Other Features .....	21
9.	B.2.a.	Areas for Isolating Waste .....	22
10.	B.2.b.	Location of Leachate System .....	23
C.	LAC 33:VII.521.C	FACILITY SURFACE HYDROLOGY	
1.	C.1.a.	Prevent Surface Drainage .....	24
2.	C.1.b.	Runoff/Run-on .....	25
3.	C.1.c.	Maximum Rainfall .....	26
4.	C.1.d.	Aquifer Recharge Areas .....	27
5.	C.1.e.	Restriction of Flood Plain .....	28
D.	LAC 33:VII.521.D.	FACILITY GEOLOGY	
1.	D.1.a.	Cross-section of Soils .....	29
2.	D.1.b.	Soil Boring Logs .....	30
3.	D.1.c.	Soil Classification Tests .....	31
4.	D.1.d.	Geologic Cross-section .....	32
5.	D.1.e.	Fault Verification .....	33
6.	D.1.f.	Seismic Impact Zone Calculations .....	33
7.	D.1.g.	Unstable Area Demonstration .....	33
8.	D.2.	Type III Facility .....	34
E.	LAC 33:VII.521.E.	FACILITY SUBSURFACE HYDROLOGY	
1.	E.1.a.i.	Areal Extent Beneath Facility .....	35a-35c
2.	E.1.a.ii.	Thickness and Depth Permeable Zones .....	36
3.	E.1.a.iii.	Groundwater Flow Directions and Rate ....	37a-37b
4.	E.1.a.iv.	Change in Groundwater Flow .....	38a-38b
5.	E.1.b.i.	Areal Extent Recognized Aquifers .....	39
6.	E.1.b.ii.	Thickness and Depth Recognized Aquifer .....	40
7.	E.1.b.iii.	Interconnection of Aquifer .....	41
8.	E.1.b.iv.	Groundwater low .....	42
9.	E.2.	Type II Landfarms .....	43
F.	LAC 33:VII.521.F.	FACILITY PLANS AND SPECIFICATIONS	
1.	F.1.	Certification .....	44
2.	F.2.a.	Detailed Plan View Drawings .....	45
3.	F.2.b.	Pertinent Features Drawings .....	46
4.	F.2.c.	Levee Material and Source .....	47
5.	F.3.a.	Dimensions of Daily Fill & Cover .....	48
6.	F.3.b.	Type of Cover Material and Source .....	49

7.	F.4.a.	Geologic Cross-sections.....	50
8.	F.4.b.	Description of Liner System .....	51a-51b
9.	F.4.c.	Description of Leachate System .....	52a-52b
10.	F.5.a.	Groundwater Flow Direction.....	53
11.	F.5.b.	Groundwater Monitoring Wells .....	54
12.	F.5.c.	Groundwater Monitoring Program.....	55
13.	F.5.d.	Monitoring Well Data .....	56
14.	F.5.e.	Groundwater Plan.....	57
15.	F.5.f.	Monitoring Well Abandonment.....	58
16.	F.6.	Gas Collection System .....	59
G.	LAC 33:VII.521.G.	FACILITY ADMINISTRATIVE PROCEDURES	
1.	G.1.a.	Recordkeeping System .....	60a-60b
2.	G.1.b.	Minimum Personnel .....	61
3.	G.1.c.	Days of Operation.....	62
4.	G.2.	Certified Facility Operators .....	63
H.	LAC 33:VII.521.H.	FACILITY OPERATIONAL PLANS	
1.	H.1.a.	Type and Quantity of Waste.....	64a-64b
2.	H.1.b.	Waste Handling Procedure .....	64a-64b
3.	H.1.c.	Minimum Equipment .....	64a-64b
4.	H.1.d.	Plan to Segregate Waste .....	65
5.	H.1.e.	Inclement Weather Procedures .....	66
6.	H.1.f.	Safety Contingency Plan .....	67
7.	H.1.g.	Vector Control.....	68
8.	H.2.a.	Operational Plan.....	69
9.	H.2.b.	Salvaging Procedures.....	70
10.	H.2.c.	Scavenging Control .....	71
11.	H.3.	Type I and II Landfarms .....	72
12.	H.4.	Type I-A and II-A Facilities.....	73
13.	H.5.	Type I-A and II-A Facilities.....	74
14.	H.6.	Type I-A and II-A Facilities.....	75
15.	H.7.	Air Monitoring Plan .....	76
I.	LAC 33:VII.521.I.	IMPLEMENTATION SCHEDULE	
1.	I.1.a.	Construction Schedule.....	77
2.	I.1.b.	Details of Phased Implementation.....	78
3.	I.2.	Closing or Upgrading Areas .....	79
J.	LAC 33:VII.521.J.	FACILITY CLOSURE	
1.	J.1.a.	Date of Final Closure.....	80
2.	J.1.b.	Method of Closing Facility .....	81

3.	J.1.C.	Closure Costs .....	82
4.	J.2.a.	Description of Final Cover .....	83
5.	J.2.b.	Largest Area Requiring Final Cover.....	84
6.	J.2.c.	Estimate of Maximum Inventory .....	85
7.	J.2.d.	Closure Schedule .....	86
8.	J.3.a.	Sequence of Final Closure.....	87
9.	J.3.b.	Drawing Showing Final Contours.....	88
10.	J.3.c.	Closure Document (filed with Clerk of Court ...	89
K.	LAC 33:VII.521.K.	FACILITY POST-CLOSURE	
1.	K.1.a.	Long-term Use of Facility .....	90
2.	K.1.b.	Cost of Post-Closure.....	91
3.	K.2.a.	Post Closure-Plan .....	92
4.	K.2.b.	Collection System Abandonment .....	93
5.	K.2.c.	Public Safety Measures .....	94
6.	K.2.d.	Facility Post-Closure Use.....	95
L.	LAC 33:VII.521.L.	FINANCIAL RESPONSIBILITY	
1.	L.1.	Current Land Owner .....	96
2.	L.2.	Agency Requesting Permit .....	97
3.	L.3.	Evidence of Liability Coverage.....	98
4.	L.4.	Financial Assurance Mechanism .....	99
M.	LAC 33:VII.521.M	SPECIAL REQUIREMENTS	
1.	M.	Special Requirements.....	100

## PART III-LAC 33:VII.523:ADDITIONAL SUPPLEMENTARY INFORMATION

Memorandum outlining changes to Permit which affect LAC 33:VII.523.  
Supplemental response to the "IT Decision" Questions

# VOLUME II

SECTION I	TABLE OF CONTENTS
SECTION IV	ATTACHMENTS AND APPENDICES
ATTACHMENT 1	PURCHASE AGREEMENTS & LEGAL DESCRIPTIONS
	Original Landfill Site
	Western Portion of Landfill
ATTACHMENT 2	NOTIFICATION TO FAA
	1993 Notification
	2003 Notification
ATTACHMENT 3	LETTERS FROM TRANSPORTATION AGENCIES

ATTACHMENT 4	DEMOGRAPHIC INFORMATION 1993 Notification Updated 2003 Information
ATTACHMENT 5	LETTERS FROM ENVIRONMENTAL AGENCIES 2003 Letters 1993 Letters
ATTACHMENT 6	WETLAND DETERMINATIONS 2007 Determination West Expansion Area 2006 Determination Original Site 1999 Determination Original Site 1994 Determination Original Site
ATTACHMENT 7	WELL DOCUMENTATIONS 2003 Information 1993 Information
ATTACHMENT 8	BUFFER WAIVERS Updated Buffer Zone Correspondence Waiver for Original Site Waiver for Western Portion of Site
ATTACHMENT 9	ZONING CLASSIFICATIONS 2003 Zoning Ordinance 1993 and 1994 Zoning Letters
ATTACHMENT 10	LETTERS FROM EMERGENCY RESPONDERS
ATTACHMENT 11	METEOROLOGICAL DATA AND WIND ROSE
ATTACHMENT 12	PREVIOUS PERMIT APPLICATION CERTIFICATIONS
ATTACHMENT 13	CERTIFICATE OF LIABILITY INSURANCE, AND CLOSURE NOTIFICATION TO BE FILED CLERK OF COURT
ATTACHMENT 14	EXEMPTION REQUEST FOR CONE PENETROMETER/ BORINGS AND EXEMPTION APPROVAL LETTER
ATTACHMENT 15	PROOF OF PUBLIC NOTICE
ATTACHMENT 16	PROOF OF AUTHORITY TO SIGN PERMIT
APPENDIX A	OPERATIONAL PLAN
APPENDIX B	GROUNDWATER MONITORING PLAN
APPENDIX C	ENGINEERING CALCULATIONS
APPENDIX D	CONSTRUCTION QUALITY ASSURANCE
APPENDIX E	CLOSURE/POST-CLOSURE PLAN AND COST
APPENDIX F	LANDFILL GAS COLLECTION SYSTEM PHASE I

# VOLUME III

## SECTION I SECTION V

## TABLE OF CONTENTS GEOTECHNICAL REPORTS & INVESTIGATION

PART I	Preliminary Geotechnical Investigation (Eustis Engineering), 5-5-1990
PART II	Cone Penetrometer Results-Fugro Geosciences, Inc., 1993-1995
PART III	Borings-Soil Testing Engineers, 1993 & Boring-Engineering Associates, Inc., 2006
PART IV	Soil Test Results
PART V	LDEQ-SWD Correspondence, 1993-1995
PART VI	Plots of Geotechnical Results
PART VII	Geologic Cross Sections and Figures from Woodward Clyde Consultants From Original Permit Application and Groundwater Elevation Contour Map (Nov. 29-30, 2005)
PART VIII	Geotechnical Report Landfill Expansion Soil Testing Engineers, Jan. 1999
PART IX	Monitoring Well Plans, Excavation Stability and Consolidation Figures And settlement Plan for Cells 1-30 from Soil Testing Engineering Geotechnical Report and Letter of Explanation for Well Spacing Between Wells MW-9 and MW-10
PART X	Eustis Engineering Geotechnical Investigation January 6, 2003 and Table 1-Relationship of Subsurface Stratigraphic Units
PART XI	Figures from Eustis Engineering Geotechnical Investigation January 6, 2003 and Monitoring Well Cross-Sections
PART XII	Log of Boring and Test Results Eustis Engineering Geotechnical Investigation January 6, 2003
PART XIII	Log of Cone Penetrometer Test Results Eustis Engineering Geotechnical Investigation January 6, 2003
PART XIV	Well Report for Piezometers P1 through P6 Eustis Engineering Geotechnical Investigation January 6, 2003 and Boring Logs for EA-1-P-01-06 and EAI-P-03-06
PART XV	Supplemental Geotechnical Information Eustis Engineering January 10, 2003
PART XVI	Supplemental Enclosures from Eustis Engineering Geotechnical Information January 10, 2003
PART XVII	Existing Monitoring Well Data

# VOLUME IV

## SECTION I SECTION VI

## TABLE OF CONTENTS FIGURES

FIGURE 1	Site Location Map
FIGURE 2	Property Map Eastern Portion of Site
FIGURE 2.1	Property Map Western Portion of Site
FIGURE 3	Land Usage
FIGURE 4	Flood Plain Map
FIGURE 5R1	Location of Wells
FIGURE 6	Aerial Photograph
FIGURE 7	Fault Location Map
FIGURE 8.1	Topographic Map
FIGURES 9 - 29	Relocated to Volume III
	Geologic Cross Sections and Figures from Woodward Clyde
	Consultants From Original Permit Application (See Volume III Section
	V Part VII for Figures)
FIGURE 30C	Initial Site Plan
FIGURE 31	Overall Site Plan
FIGURE 32	Overall Site Excavation Plan
FIGURE 33	Overall Site Top of Clay Liner Plan
FIGURE 34	Leachate Collection System
FIGURE 35	Finished Grading Plan
FIGURE 36	Typical Landfill Section East-West Section A
FIGURE 37	Typical Landfill Section North-South Section B
FIGURE 38	Typical Landfill Section Filling Sequence
FIGURE 39	Typical Liner, Access Road & Landfill Details
FIGURE 40	Leachate Collection and Liner Details
FIGURE 40A	Leachate Collection Pipe & Vertical Riser Details for Cells 13-25, 37, 29, 31
FIGURE 41	Typical Landfill Details
FIGURE 42	Finish Site Plan
FIGURE 43	Operations Site Plan
FIGURE 44	Typical Details Interior Perimeter Ditch
FIGURE 45	Project Implementation Schedule
FIGURE 46	Drainage Area Map
FIGURE 47	Site Grid System
FIGURE 48	Leachate Treatment Pond Site Plan
FIGURE 49	Leachate Treatment Pond Typical Details
FIGURE 50	Miscellaneous Details and Sections
FIGURE 51	Miscellaneous Details and Sections
FIGURE 52	Typical Details for Reconstruction of Existing Leachate Treatment Pond to Waste Disposal Cell

FIGURE 53 Reserved for Future Drawing

FIGURE 54 - 70 Relocated in Volume III

Monitoring Well Plans, Excavation Stability and Consolidation

Figures and Settlement Plan for Cells 1-30 from Soil Testing Engineers

Geotechnical Report (See Volume III Section V Part IX for Figures)

FIGURE J 1 Gas Extraction System

FIGURE J 2 Typical Landfill Section Gas Extraction System

# **VOLUME I**

## **SECTION II**

### **Existing Permit Documents**





# State of Louisiana

## Department of Environmental Quality



L. "MIKE" FOSTER, JR.  
GOVERNOR

May 8, 1997

J. DALE GIVENS  
SECRETARY

CERTIFIED MAIL P 531 376 732  
RETURN RECEIPT REQUESTED

Mr. A. J. Ward, Jr.  
River Birch, Incorporated  
Post Office Box 1938  
Gretna, Louisiana 70054

RE: Issuance of Standard Type I and Type II  
Landfill Permit  
River Birch, Incorporated  
~~River Birch Landfill~~  
~~Gretna, Louisiana~~  
Jefferson Parish

Dear Mr. Ward:

Under the authority of the Louisiana Environmental Quality Act (La. R.S. 30:2001 et seq.), I hereby issue the enclosed Standard Type I and Type II Permit for the above-referenced facility.

Upon completion of construction, a qualified professional must certify that the facility has been constructed in accordance with the representations made in the permit application and all conditions specified in this Standard Permit.

Upon receipt of the Standard Permit, completion of construction measures and certification by a registered engineer, licensed in the State of Louisiana, an initial start-up inspection will be conducted by the Solid Waste Division. All start-up inspections shall be initiated within ten (10) working days of receipt of certification by the Solid Waste Division.

Please note that in accordance with LAC 33:VII.509.C.4, within fifteen (15) working days after the start-up inspection, the Solid Waste Division will issue an order authorizing commencement of operation or a written Notice of Deficiency to the permittee.

OFFICE OF SOLID AND HAZARDOUS WASTE • SOLID WASTE DIVISION • P.O. BOX 82178 • BATON ROUGE, LOUISIANA 70884-2178

TELEPHONE (504) 765-4249 • FAX (504) 765-0377 • E-MAIL ADDRESS [solid@deq.state.la.us](mailto:solid@deq.state.la.us)

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Mr. A. J. Ward, Jr.  
Page Two

Also, in accordance with LAC 33:509.E.3, within ten (10) working days after a new unit of a facility has undergone a unit start-up inspection, the Solid Waste Division will issue an order authorizing commencement of operation or a written Notice of Deficiency to the permittee.

This permit action shall become final and not subject to further administrative review unless, no later than thirty (30) days after receipt of this document, you file a written request for a hearing.

Attention: Barry Brooks  
Louisiana Department of Environmental Quality  
Office of the Secretary  
Post Office Box 82263  
Baton Rouge, Louisiana 70884-2263

A copy of this request should be sent to the Solid Waste Division.

In accordance with LAC 33:VII.513.H, the permit holder shall publish a notice of the issuance of the standard permit no later than ten (10) days following the issuance of the permit. This notice shall be published in the official journal of the state and in the official journal of the parish where the facility is located.

If you have any questions concerning this matter, please contact Ms. Yolunda Righteous of the Solid Waste Division at (504) 765-0249.

Sincerely,

  
J. DALE GIVENS  
Secretary

JDG:YR:ntw

Enclosure

STATE OF LOUISIANA

DEPARTMENT OF ENVIRONMENTAL QUALITY

IN THE MATTER OF:

RIVER BIRCH INCORPORATED  
TYPE I AND II SOLID WASTE LANDFILL

DOCKET NO. AHD-SX-96012

PROCEEDINGS UNDER THE LOUISIANA  
ENVIRONMENTAL QUALITY ACT  
LA. R.S. 30:2011 ET SEQ

\* \* \* \* \*

**WRITTEN REASONS, FINDINGS, AND CONCLUSIONS**

This matter comes before the Department on an application of a Type I and II solid waste landfill permit received by the Department on or about May 9, 1994, from River Birch Incorporated (River Birch). A Type I landfill is used for the disposal of industrial solid wastes and a Type II landfill is used to dispose of residential or commercial solid waste. The proposed River Birch Landfill site is located on a 323 acre tract of land in Jefferson Parish, Louisiana. Kelvin Landfill, which is owned by Jefferson Parish, is adjacent to the proposed landfill on the east of the proposed facility and the Greater New Orleans Landfill and the Jefferson Parish sludge lagoon border the River Birch proposed site on the west. The service area of the proposed landfill includes the following parishes: St. Tammany, St. John, St. Charles, Jefferson, St. Bernard, Plaquemine and Orleans.

There was a public review and comment period on the permit application from October 26, 1995 through November 26, 1995. Due to the extensive amount of public comment, a public hearing was held on the permit application on November 16, 1995, in Harahan, Louisiana. After the public hearing, there was a second public comment period which ended

on December 16, 1995. On December 18, 1995, the permit application was deemed technically complete by the Solid Waste Division. On January 8, 1996, the then Secretary of the Department, William A. Kucharski, rendered a decision denying River Birch's permit application. On or about January 16, 1996, River Birch Inc. filed a request with the Department to rescind Secretary Kucharski's permit denial, and in the alternative, requested an adjudicatory hearing on the permit denial. On or about February 13, 1996, River Birch's adjudicatory hearing request was granted and an adjudicatory hearing was held on June 10, 1996 through June 14, 1996. The hearing was recessed and then reconvened on June 25, 1996 through June 27, 1996. The hearing was conducted by Administrative Law Judge Michelle Finnegan. On September 30, 1996, I issued an order recalling and rescinding former Secretary Kucharski's permit denial. Judge Finnegan did not render any decision or recommendations in this matter.

Public comments received during both public comment periods, the public hearing, and the adjudicatory hearing are summarized as follows: concerns of odors, potential groundwater contamination, traffic flow, the landfill concentration in the area specifically the Greater New Orleans Landfill and Kelvin Landfill, dust, vectors, litter, glares, and airport safety. This decision responds to those comments and concerns.

Upon a thorough review of the record submitted, which includes the transcripts of the public hearing and the adjudicatory hearing, all exhibits, and the public comments received during the public comment periods, I have reached the following determinations. I believe that Secretary Kucharski's decision to deny River Birch a solid waste landfill permit was erroneously reached for failure to consider the need for this proposed facility.

The record clearly demonstrates that the River Birch permit application was technically complete and met all requirements of the Louisiana Solid Waste Regulations. However, as the designated public trustee of the environment, I am obligated to consider factors beyond the regulations when making a determination as to whether or not a permit should be granted or denied. Save Ourselves, v. La. Environ. Cont. Com'n, 452 So. 2d 1152 (La. 1984). Those factors are commonly referred to as the "IT" factors and are as follows:

1. Have the real and potential adverse environmental effects of the proposed project been avoided to the maximum extent possible?
2. Has a cost benefit analysis of the environmental impact costs balanced against the social and economic benefits of the project demonstrate that the latter outweigh the former; and
3. Are there alternative projects or alternative sites or mitigating measures which would offer more protection to the environment than the proposed project without unduly curtailing non-environmental benefits to the extent applicable.

The first question requires the Department to determine what are the real and potential adverse environmental effects of the proposed facility and whether or not those effects have been minimized to the maximum extent possible. The record reveals only one real adverse environmental effect of the proposed facility and that is the destruction of wetlands. Portions of the River Birch facility have been declared wetlands by the U.S. Army Corps of Engineers. However, the actual destruction of wetlands has been minimized to the maximum extent possible because River Birch will not be operating on any portion of the facility designated as a wetland area. It will only upgrade an existing road for travel purposes.

There are several potential adverse environmental effects of the proposed facility disclosed in the record. The first is the potential of odors migrating off site from the proposed facility. This potential adverse environmental effect has been minimized to the maximum extent possible by the facility having the requisite buffer zones of 200 feet on certain portions of the facility and by receiving a waiver from the buffer zone requirements on other portions of the facility. In any event, the buffer zones waivers were no less than 100 feet. In addition, River Birch proposes to apply daily and interim cover to exposed waste. One of the many purposes of daily cover is to reduce noxious odors by minimizing outward movement of gas from the facility.

Another potential adverse environmental effect is groundwater contamination. There are three (3) aquifers near the proposed River Birch site, one at the 200 foot sand, one at the 400 foot sand, and another at the 700 foot sand. None of these aquifers provide potable drinking water in the vicinity of the proposed landfill. River Birch proposes to have a clay liner and a synthetic liner which meet the liner criteria for Subtitle D landfills. I believe that potential contamination to the aquifers is minimized to the maximum extent possible by the presence of these liners.

In addition, groundwater could be contaminated from leachate. Leachate is a solid waste that has resulted from liquid passing through or emerging from solid waste. Groundwater can potentially be contaminated by leachate in two ways: (1) from the facility itself; and (2) from leaking vehicles transporting waste. River Birch has proposed to collect and treat the leachate produced by the facility in a leachate collection system. This system will collect and treat storm water or any other water or liquid that comes in contact with solid waste at the site. Once the leachate is treated, it will be discharged to a permitted Louisiana

Pollutant Discharge Elimination System (LPDES) outfall. The leachate system will be operated during the active life of the facility and the post closure period. (Other surface waters will be collected with a separate system and will be discharged at a permitted LPDES discharge point.) River Birch proposes to control potential leachate from trucks by transporting waste in vehicles that are equipped with a containment system to prevent leachate from being discharged into the environment.

Finally, groundwater monitoring wells will be installed to monitor the groundwater during the active life of the facility and during the post closure period of the facility as well. I believe with the presence of the liners, the collection systems, and the groundwater monitoring proposed, the potential for groundwater contamination is minimized to the maximum extent possible.

Another potential adverse environmental effect revealed by the record is vectors. This includes rats, flies, mosquitoes, birds, and mice. During the course of the adjudicatory proceeding, citizens claimed that armadillos and snakes were also vector problems; however, based on the testimony given at the proceeding, I find they are not vector problems associated with landfill operations. To address the vector concern, River Birch proposes to apply interim and daily cover to exposed waste. The purpose of the cover is to discourage animal attraction to the landfill and it limits animals from burrowing for food. I believe that potential problems associated with vectors should be controlled to the maximum extent possible by River Birch's proposal to apply daily and interim cover to exposed waste.

The solid waste regulations inherently address concerns to human health and the environment as it relates to airport safety. This includes potential aircraft problems associated with birds. It is well known that certain species of birds are attracted to putrescible solid waste.

Therefore, the solid waste regulations prohibit the location of a facility that dispose of putrescible solid waste from being within 10,000 feet of any public-use airport runway end used by turbojet aircraft or within 5,000 feet of any public-use airport runway end used by only piston-type aircraft. The closest public use airport runway end used by turbojet aircraft to the proposed River Birch facility is located at the New Orleans International Airport, and its runway threshold is located 16,000 feet from the proposed site thereby exceeding the 10,000 feet limit. There are no public-use airport runway ends used by only piston-type aircraft within 5,000 feet of the proposed site. Therefore, I find that the operation of the proposed facility does not pose a potential or a real adverse environmental effect to airport safety.

There also has not been a demonstration that litter, dust, or glares pose a real or potential adverse environmental effect to the environment. At best, they are nuisances which should be controlled by the operation of the facility in accordance with the solid waste regulations and River Birch's Department approved operational plan. Nor has there been a demonstration that increased truck traffic in the proposed area of the facility will pose a real or potential adverse environmental effect to the environment. October 18, 1995 correspondence to the Department from the State of Louisiana Department of Transportation and Development states that the increase in traffic will not adversely impact US 90 and I agree.

The second IT factor I am obligated to address is does a cost benefit analysis of the environmental impact costs balanced against the social and economic benefits of the project demonstrate that the latter outweigh the former. Environmental amenities will often be in conflict with economic and social considerations. To consider the former along with the latter must involve a balancing process. In some instances environmental costs may outweigh economical and social benefits and in other instances they may not. This leave room for a



responsible exercise of discretion and may not require particular substantive results in particular problematic instances. Save Ourselves, v. La. Environ. Cont. Com'n, 452 So. 2d 1152, 1157 (La. 1984).

The service area of the proposed landfill includes the following parishes: St. Tammany, St. John, St. Charles, Jefferson, St. Bernard, Plaquemine and Orleans. The amount of waste being generated by those parishes is constantly increasing and the life expectancy of the facilities in the area that may be capable of handling their waste is diminishing. Currently, there are only three (3) facilities permitted to accept commercial solid waste in the area, Kelvin Landfill, Greater New Orleans Landfill (GNOL), and Coast Guard Road Landfill. Kelvin Landfill is permitted to receive solid waste from Jefferson Parish only and would require a permit modification to receive waste from other parishes. Coast Guard Road Landfill is a small landfill which is expected to close next year in 1998; and furthermore, it will have to obtain a new permit or receive a permit renewal if it intends to operate beyond that date. GNOL has an expected closure date that is no later than six (6) months from December, 1999. The proposed landfill is not expected to be constructed and operational until 1999. Therefore, River Birch will not be operational until after GNOL's and Coast Guard Road Landfill's expected closure dates. Considering these factors, there clearly is a need for the River Birch facility since there will not be any facilities in the area capable of accepting that waste.

Additionally, if there is no landfill permitted to accept the municipal solid waste from the proposed service area of River Birch, an economic burden of increased disposal costs may be borne by the residents of those parishes in the proposed service area if those residents have to pay disposal costs which include long distance travel expenses.

Secretary Kurcharski premised his denial decision in this matter on the basis that the adjacent communities to the proposed landfill have borne a disproportionate burden over the past years. However, the Secretary failed to define what is meant by a disproportionate burden. Earlier in Secretary Kurcharski's tenure, he denied a permit to Supplemental Fuels, Inc. In that decision, the Secretary stated that, "There are no established standards however, that define "disproportionate" or "burdened" or disproportionate impact" or "disproportionately burdened".

Also in the decision, the Secretary recognized that regulatory standards were designed to be protective of human health and the environment and that absent such standards that can be applied in a consistent manner to all permit situations, claims that having more impacts or potential impacts constituted a "disproportionate burden" had to be rejected. (In Re: *Supplemental Fuels, Inc.* (Hardy Berthelot) No. AHD-HX-93054 (Hazardous Permit Action, Secretary's Final Decision) (La. Dept. Environmental Quality (La. 1/24/94)

However, to the contrary in the River Birch matter, the Secretary failed to follow his own previous decision. He failed to establish a standard that can be applied to determine how there is a disproportionate burden to the adjacent communities that can be applied to all permits. Lacking such a standard, disproportionate burden should not be applied in this matter either.

Therefore, I find that the proposed River Birch facility will provide both social and economic benefits. I also find that those benefits outweigh any environmental costs, particularly in light of the fact that the environmental effects of the facility are mainly potential, not real and possibly nuisances.

The last IT factor requires a determination as to whether or not there are alternative sites or alternative projects or mitigating measures that would offer more protection to the

environment than the proposed project without unduly curtailing non-environmental benefits to the extent applicable. There was an extensive alternative site analysis performed in this matter. A total of forty-seven (47) other sites were examined before concluding that the proposed site would be the best site. The sites were evaluated on criteria including economic feasibility such as transportation costs and tipping fees, the availability of a site that was of the appropriate size, proximity to urban areas, wetland and prime farmland determinations, and existing land use and zoning requirements. The initial inquiry into alternative sites began with a Phase I Screening using New Orleans as the focal point since the capture of the New Orleans area waste stream would have the largest economic impact. During this phase, a polygon was constructed having points on major highways denoting thirty (30) roadway miles from New Orleans. This covered areas extending north to Mandeville, south to Lafitte and Rosalie, west to Edgard, and east to Verret. The forty-seven (47) other potential sites were discovered in these areas. This phase also included an analysis of the existence of wetlands and prime farmland soils to determine site suitability which revealed that seven (7) of the forty-seven (47) potential sites could be suitable for a solid waste landfill. Next, a Phase II Screening of the sites evaluating the sites on size availability and on economical feasibility was performed. Then the sites were evaluated utilizing existing land use and zoning requirements as criteria in a Phase III Screening. This evaluation eliminated five (5) more sites leaving two (2) sites remaining. The final two (2) sites were evaluated on economical feasibility, land use, and proximity to residential areas. They were later eliminated based on those criteria. Departmental personnel, which included an engineer, a geologist, a scientist, and a program manager who supervises all of those individuals, all concluded that the site selected, River Birch, was suitable for a landfill and would be protective of the environment. 1

agree. After evaluating all information in the record, I believe that there are no alternative sites that would offer more protection to the environment than the proposed site without curtailing non-environmental benefits.

I also examined whether there are alternative projects that will offer more protection to the environment than the proposed facility without unduly curtailing non-environmental benefits. Other alternative projects include mixed solid waste composting, a mass burn facility with water well, resource recovery facilities, modular unit incineration, and refuse derived fuel incineration.

Mixed solid waste composting requires final disposal of residue, a nitrogen supply, and involves significant odors. This alternative project does not offer more protection to the environment than the proposed project.

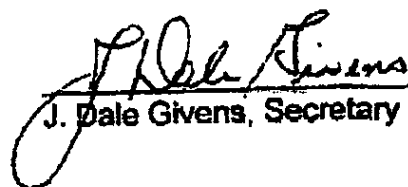
A mass burn facility with a water well requires landfill disposal of the resulting ash. This project has the potential for groundwater contamination, specifically high concentrations of heavy metals, and it could result in significant air pollutant emissions. This alternative project does not offer more protection to the environment than the proposed project.

Resource recovery, modular unit incineration, and refuse derived fuel incineration are costly projects and are not economically feasible. These alternative projects do not offer more protection to the environment than the proposed facility without unduly curtailing non-environmental benefits.

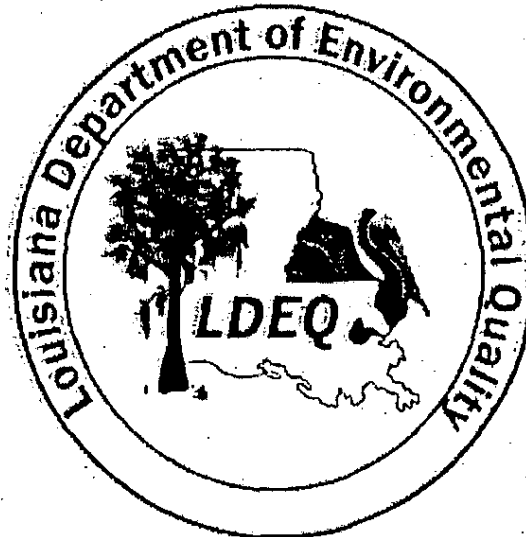
Finally, the last issue I addressed relative to the IT factors is mitigating measures. There are no mitigating measures that would offer more protection to the environment than the proposed facility without unduly curtailing non-environmental benefits.

After a careful review of the record, which includes the permit application, correspondence with River Birch and River Birch's consultants, the transcripts of all proceedings had in this matter, all exhibits, and the public comments received during the public comment period, I find that the proposed facility will be protective of the environment and hereby issue River Birch Inc. P-0321 standard Type I and II solid waste landfill permit.

Baton Rouge, Louisiana, this 8<sup>th</sup> day of May 1997.

  
J. Dale Givens, Secretary

# LPDES PERMIT



LPDES PERMIT  
NUMBER: LA0099473  
AGENCY INTEREST  
NUMBER: AI33219  
PER20030003

OFFICE OF ENVIRONMENTAL SERVICES  
**Water Discharge Permit**

Pursuant to the Clean Water Act, as amended (33 U.S.C. 1251 et seq.), and the Louisiana Environmental Quality Act, as amended (La. R. S. 30:2001 et seq.), rules and regulations effective or promulgated under the authority of said Acts, and in reliance on statements and representations heretofore made in the application, a Louisiana Pollutant Discharge Elimination System permit is issued authorizing

River Birch, Inc.  
River Birch Landfill  
P. O. Box 1938  
Gretna, LA 70054

Type Facility: a municipal solid waste landfill

Location: on the east side of South Kenner Road, approximately ½ mile north of the intersection with U.S. Hwy. 90, Waggaman, Jefferson Parish


Receiving Waters: Sauls Canal, thence into Waggaman Canal, thence into Outfall Canal, thence into Lake Cataouatche

to discharge in accordance with effluent limitations, monitoring requirements, and other conditions set forth in Parts I, II, and III attached hereto.

This permit shall become effective on February 1, 2005

This permit and the authorization to discharge shall expire five (5) years from the effective date of the permit.

Issued on December 1, 2004

  
Karen K. Gautreaux  
Deputy Secretary

## INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning the effective date of the permit and lasting through twenty-four months from the effective date of the permit the permittee is authorized to discharge from:

Outfall 001, located at the eastern section of the site at Long. 90° 15' 10" & Lat 29° 56' 03", treated leachate, treated contaminated stormwater from the active disposal area, and the treated truck wash water area (expected flow is 0.21 MGD).

Such discharges shall be limited and monitored by the permittee as specified below:

<u>Effluent Characteristic</u>	<u>Storet Code</u>	<u>Discharge Limitations</u>			<u>Monitoring Requirements</u>	
		(lbs/day)	other units (specify)		Measurement Frequency*	Sample Type
		<u>Monthly Avg.</u>	<u>Monthly Avg.</u>	<u>Daily Max</u>		
Flow-MGD	50050	—	Report	Report	Continuous	Recorder
BOD <sub>5</sub>	00310	—	30 mg/l	45 mg/l	1/month	Grab
TSS	00530	—	30 mg/l	45 mg/l	1/month	Grab
Ammonia-Nitrogen	00610	—	4.9 mg/l	10 mg/l	1/month	Grab
Oil & Grease	00552	—	—	15 mg/l	1/month	Grab
Chlorides #	00940	—	—	850 mg/l	1/month	Grab
Sulfates	00945	—	—	250 mg/l	1/month	Grab
Turbidity(NTU)	00070	—	Report	Report	1/month	Grab
Priority Pollutants ‡	51168	—	—	Report ug/l	1/6 months	24-Hr. Comp.
pH (Standard Units)**	00400	—	—	—	1/month	Grab

	<u>Storet Code</u>	(lbs/day)	(lbs/day)	Monthly	Daily	Measurement	Sample
		<u>Monthly Avg.</u>	<u>Daily Max.</u>	<u>Avg.</u>	<u>Max</u>	<u>Frequency</u>	<u>Type</u>
Alpha Terpineol	51045	Report	Report	0.016 mg/l	0.033 mg/l	1/Quarter	24-Hr. Comp.
Benzoic Acid	77247	Report	Report	0.071 mg/l	0.12 mg/l	1/Quarter	24-Hr. Comp.
p-Cresol	77146	Report	Report	0.014 mg/l	0.025 mg/l	1/Quarter	24-Hr. Comp.
Zinc	01092	Report	Report	0.11 mg/l	0.20 mg/l	1/Quarter	24-Hr. Comp.
Phenol	34694	Report	Report	0.015 mg/l	0.026 mg/l	1/Quarter	24-Hr. Comp.

## QUALITY (PERCENT % UNLESS STATED)

	<u>Monthly Avg. Min.</u>	<u>7- Day Min.</u>	<u>Measurement Frequency* 2/</u>	<u>Sample Type</u>
Biomonitoring***				
<u>Ceriodaphnia dubia</u>				
STORET: TLP3B 1/	Report	Report	1/quarter	24-Hour Composite
STORET: TOP3B	Report	Report	1/quarter	24-Hour Composite
STORET: TPP3B	Report	Report	1/quarter	24-Hour Composite
STORET: TGP3B 1/	Report	Report	1/quarter	24-Hour Composite
STORET: TQP3B	Report	Report	1/quarter	24-Hour Composite



## INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

	<u>Monthly Avg. Min.</u>	<u>7- Day Min.</u>	<u>Measurement Frequency* <sup>2/</sup></u>	<u>Sample Type</u>
<u>Pimephales promelas</u>				
STORET: TLP6C <sup>1/</sup>	Report	Report	1/quarter	24-Hour Composite
STORET: TOP6C	Report	Report	1/quarter	24-Hour Composite
STORET: TPP6C	Report	Report	1/quarter	24-Hour Composite
STORET: TGP6C <sup>1/</sup>	Report	Report	1/quarter	24-Hour Composite
STORET: TQP6C	Report	Report	1/quarter	24-Hour Composite

If a test failure has occurred and the required retests have been performed, the test results are to be reported on the DMR as follows:

## Whole Effluent Toxicity Testing

	<u>Storet Code</u>	<u>Monthly Avg. Minimum</u>	<u>7-Day Minimum</u>	<u>Measurement Frequency <sup>2/</sup></u>	<u>Sample Type</u>
Retest #1	22415	Report <sup>1/</sup>	Report <sup>1/</sup>	As Required	24-Hr. Composite
Retest #2	22416	Report <sup>1/</sup>	Report <sup>1/</sup>	As Required	24-Hr. Composite

<sup>1/</sup>Species Quality Reporting Units: Pass = 0, Fail = 1

<sup>2/</sup>If there are no lethal and sublethal effects demonstrated at or below the critical dilution after the first year of quarterly testing, the permittee may certify fulfillment of the WET testing requirements in writing to the permitting authority. If granted, the monitoring frequency for the test species may be reduced to not less than once per six months for the most sensitive species usually *Ceriodaphnia dubia* and not less than once per year for the less sensitive species usually *Pimephales promelas*. Upon expiration of the permit, the monitoring frequency for both species shall revert to once per quarter until the permit is re-issued.

\* Sample shall be taken when a discharge occurs.

± Part II, Section B

\*\* The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units. The permittee shall report on the Discharge Monitoring Reports both the minimum and maximum instantaneous pH values measured.

\*\*\* See Part II, Section D, Whole Effluent Toxicity Testing Requirements

‡ See Part II, Section A, Paragraph 9

There shall be no discharge of floating solids or visible foam in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location:

Outfall 001, at the point of discharge from the last treatment unit prior to mixing with other waters.

## FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning twenty-four months from the effective date of the permit and lasting through the expiration date of the permit the permittee is authorized to discharge from:

Outfall 001, located at the eastern section of the site at Long. 90° 15' 10" & Lat 29° 56' 03", treated leachate, treated contaminated stormwater from the active disposal area, and the treated truck wash water area (expected flow is 0.21 MGD).

Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Storet Code	Discharge Limitations			Monitoring Requirements	
		(lbs/day)	other units (specify)		Measurement Frequency*	Sample Type
		Monthly Avg.	Monthly Avg.	Daily Max		
Flow-MGD	50050	—	Report	Report	Continuous	Recorder
BOD <sub>5</sub>	00310	—	30 mg/l	45 mg/l	1/month	Grab
TSS	00530	—	30 mg/l	45 mg/l	1/month	Grab
Ammonia-Nitrogen	00610	—	4.9 mg/l	10 mg/l	1/month	Grab
Oil & Grease	00552	—	—	15 mg/l	1/month	Grab
Fecal Coliform colonies/100ml †	74055	—	200	400	1/month	Grab
Chlorides ‡	00940	—	—	850 mg/l	1/month	Grab
Sulfates	00945	—	—	250 mg/l	1/month	Grab
Turbidity (NTU)	00070	—	Report	Report	1/month	Grab
Priority Pollutants ‡	51168	—	—	Report ug/l	1/6 months	24-Hr. Comp.
pH (Standard Units)**	00400	—	—	—	1/month	Grab

	Storet Code	(lbs/day) Monthly Avg.	(lbs/day) Daily Max.	Monthly Avg.	Daily Max	Measurement Frequency	Sample Type
Alpha Terpineol	51045	Report	Report	0.016 mg/l	0.033 mg/l	1/Quarter	24-Hr. Comp.
Benzoic Acid	77247	Report	Report	0.071 mg/l	0.12 mg/l	1/Quarter	24-Hr. Comp.
p-Cresol	77146	Report	Report	0.014 mg/l	0.025 mg/l	1/Quarter	24-Hr. Comp.
Zinc	01092	Report	Report	0.11 mg/l	0.20 mg/l	1/Quarter	24-Hr. Comp.
Phenol	34694	Report	Report	0.015 mg/l	0.026 mg/l	1/Quarter	24-Hr. Comp.

## QUALITY (PERCENT % UNLESS STATED)

	Monthly Avg. Min.	7- Day Min.	Measurement Frequency* 2'	Sample Type
Biomonitoring***				
<u>Ceriodaphnia dubia</u>				
STORET: TLP3B <sup>1'</sup>	Report	Report	1/quarter	24-Hour Composite
STORET: TOP3B	Report	Report	1/quarter	24-Hour Composite
STORET: TPP3B	Report	Report	1/quarter	24-Hour Composite
STORET: TGP3B <sup>1'</sup>	Report	Report	1/quarter	24-Hour Composite
STORET: TQP3B	Report	Report	1/quarter	24-Hour Composite

## PART I

Page 5 of 9

LA0099473/AI32219/PER20030003

## FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

	<u>Monthly Avg. Min.</u>	<u>7- Day Min.</u>	<u>Measurement Frequency</u> * <sup>2/</sup>	<u>Sample Type</u>
<u>Pimephales promelas</u>				
STORET: TLP6C <sup>1/</sup>	Report	Report	1/quarter	24-Hour Composite
STORET: TOP6C	Report	Report	1/quarter	24-Hour Composite
STORET: TPP6C	Report	Report	1/quarter	24-Hour Composite
STORET: TGP6C <sup>1/</sup>	Report	Report	1/quarter	24-Hour Composite
STORET: TQP6C	Report	Report	1/quarter	24-Hour Composite

If a test failure has occurred and the required retests have been performed, the test results are to be reported on the DMR as follows:

## Whole Effluent Toxicity Testing

	<u>Storet Code</u>	<u>Monthly Avg. Minimum</u>	<u>7-Day Minimum</u>	<u>Measurement Frequency</u> <sup>2/</sup>	<u>Sample Type</u>
Retest #1	22415	Report <sup>1/</sup>	Report <sup>1/</sup>	As Required	24-Hr. Composite
Retest #2	22416	Report <sup>1/</sup>	Report <sup>1/</sup>	As Required	24-Hr. Composite

<sup>1/</sup>Species Quality Reporting Units: Pass = 0, Fail = 1

<sup>2/</sup>If there are no lethal and sublethal effects demonstrated at or below the critical dilution after the first year of quarterly testing, the permittee may certify fulfillment of the WET testing requirements in writing to the permitting authority. If granted, the monitoring frequency for the test species may be reduced to not less than once per six months for the most sensitive species usually *Ceriodaphnia dubia* and not less than once per year for the less sensitive species usually *Pimephales promelas*, respectively. Upon expiration of the permit, the monitoring frequency for both species shall revert to once per quarter until the permit is re-issued.

\* Sample shall be taken when a discharge occurs.

‡ Part II, Section B

\*\*\* The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units. The permittee shall report on the Discharge Monitoring Reports both the minimum and maximum instantaneous pH values measured.

\*\*\* See Part II, Section D, Whole Effluent Toxicity Testing Requirements

† See Part II, Section A, Paragraph 10

‡ See Part II, Section A, Paragraph 9

There shall be no discharge of floating solids or visible foam in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location:

Outfall 001, at the point of discharge from the last treatment unit prior to mixing with other waters.

PART I

Page 6 of 9

LA0099473/A132219/PER20030003

FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

During the period beginning the effective date of the permit and lasting through the expiration date of the permit the permittee is authorized to discharge from:

Outfall 002, located on the southwest corner of the site at Long. 90° 15' 59" & Lat 29° 55' 22", treated sanitary wastewater from the office and lab building (expected flow is 0.0015 MGD).

Such discharges shall be limited and monitored by the permittee as specified below:

<u>Effluent Characteristic</u>	<u>Storet Code</u>	<u>Discharge Limitations</u>			<u>Monitoring Requirements</u>	
		(lbs/day)	other units (specify)		Measurement Frequency	Sample Type
		<u>Monthly Avg.</u>	<u>Monthly Avg.</u>	<u>Weekly Avg.</u>		
Flow-MGD	50050	—	Report	Report	1/month	Estimate
BOD <sub>5</sub>	00310	—	—	45 mg/l	1/month	Grab
TSS	00530	—	—	45 mg/l	1/month	Grab
Fecal Coliform colonies/100ml †	74055	—	—	400	1/month	Grab
pH (Standard Units)*	00400	—	—	—	1/month	Grab

† See Part II, Section A, Paragraph # 10

\* The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units. The permittee shall report on the Discharge Monitoring Reports both the minimum and maximum instantaneous pH values measured.

There shall be no discharge of floating solids or visible foam in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location:

Outfall 002, at the point of discharge from the last treatment unit prior to mixing with other waters.

## PART I

Page 7 of 9

LA0099473/AI32219/PER20030003

## FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

During the period beginning the effective date of the permit and lasting through the expiration date of the permit the permittee is authorized to discharge from:

Outfall 003, located on the south side of the site at Long. 90° 15' 29" & Lat 29° 55' 44", uncontaminated stormwater from non active areas (**expected flow** is 2.8 MGD).

Such discharges shall be limited and monitored by the permittee as specified below:

<u>Effluent Characteristic</u>	Storet Code	<u>Discharge Limitations</u>			<u>Monitoring Requirements</u>	
		(lbs/day)	other units (specify)		Measurement Frequency*	Sample Type
Flow-MGD	50050	—	Report	Report	Daily	Estimate
TOC	00310	—	—	50 mg/l	1/month	Grab
Oil & Grease	00552	—	—	15 mg/l	1/month	Grab
TSS	00530	—	—	Report mg/l	1/month	Grab
Ammonia-Nitrogen	00610	—	—	Report mg/l	1/month	Grab
Turbidity(NTU)	00070	—	—	Report	1/month	Grab
Magnesium (Total)	00927	—	—	Report***	1/6 months	24-hr. comp.
Magnesium (Dissolved)	00925	—	—	Report***	1/6 months	24-hr. comp.
Nitrate plus Nitrite-Nitrogen	00630	—	—	Report ***	1/6 months	24-hr. comp.
TDS	00525	—	—	Report ***	1/6 months	24-hr. comp.
Total Arsenic	01002	—	—	Report ***	1/6 months	24-hr. comp.
Total Barium	00000	—	—	Report ***	1/6 months	24-hr. comp.
Total Cadmium	01027	—	—	Report ***	1/6 months	24-hr. comp.
Total Chromium	01034	—	—	Report ***	1/6 months	24-hr. comp.
Total Cyanide	00720	—	—	Report ***	1/6 months	24-hr. comp.
Total Lead	01051	—	—	Report ***	1/6 months	24-hr. comp.
Total Mercury	71900	—	—	Report ***	1/6 months	24-hr. comp.
Total Selenium	01147	—	—	Report ***	1/6 months	24-hr. comp.
Total Silver	01077	—	—	Report ***	1/6 months	24-hr. comp.
pH (Standard Units)**	00400	—	—	—	1/month	Grab

\* Sample shall be taken when a discharge occurs.

\*\* The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units. The permittee shall report on the Discharge Monitoring Reports both the minimum and maximum instantaneous pH values measured.

\*\*\* Units of measurement are ug/l

There shall be no discharge of floating solids or visible foam in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location:

Outfall 003, at the point of discharge prior to mixing with other waters.

## PART I

Page 8 of 9

LA0099473/AI32219/PER20030003

## FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

During the period beginning the effective date of the permit and lasting through the expiration date of the permit the permittee is authorized to discharge from:

Outfall 004, located on the northeast side of the site at Long. 90° 15' 12" & Lat 29° 56' 09", uncontaminated stormwater from non active areas (**expected flow** is 1.5 MGD).

Such discharges shall be limited and monitored by the permittee as specified below:

<u>Effluent Characteristic</u>	Storet Code	<u>Discharge Limitations</u> (lbs/day)                      other units (specify)			<u>Monitoring Requirements</u>	
		<u>Monthly Avg.</u>	<u>Monthly Avg.</u>	<u>Daily Max.</u>	<u>Measurement Frequency*</u>	<u>Sample Type</u>
Flow-MGD	50050	—	Report	Report	Daily	Estimate
TOC	00310	—	—	50 mg/l	1/month	Grab
Oil & Grease	00552	—	—	15 mg/l	1/month	Grab
TSS	00530	—	—	Report mg/l	1/month	Grab
Ammonia-Nitrogen	00610	—	—	Report mg/l	1/month	Grab
Turbidity(NTU)	00070	—	—	Report	1/month	Grab
Magnesium (Total)	00927	—	—	Report***	1/6 months	24-hr. comp.
Magnesium (Dissolved)	00925	—	—	Report***	1/6 months	24-hr. comp.
Nitrate plus Nitrite-Nitrogen	00630	—	—	Report ***	1/6 months	24-hr. comp.
TDS	00525	—	—	Report ***	1/6 months	24-hr. comp.
Total Arsenic	01002	—	—	Report ***	1/6 months	24-hr. comp.
Total Barium	00000	—	—	Report ***	1/6 months	24-hr. comp.
Total Cadmium	01027	—	—	Report ***	1/6 months	24-hr. comp.
Total Chromium	01034	—	—	Report ***	1/6 months	24-hr. comp.
Total Cyanide	00720	—	—	Report ***	1/6 months	24-hr. comp.
Total Lead	01051	—	—	Report ***	1/6 months	24-hr. comp.
Total Mercury	71900	—	—	Report ***	1/6 months	24-hr. comp.
Total Selenium	01147	—	—	Report ***	1/6 months	24-hr. comp.
Total Silver	01077	—	—	Report ***	1/6 months	24-hr. comp.
pH (Standard Units)**	00400	—	—	—	1/month	Grab

\* Sample shall be taken when a discharge occurs.

\*\* The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units. The permittee shall report on the Discharge Monitoring Reports both the minimum and maximum instantaneous pH values measured.

\*\*\* Units of measurement are ug/l

There shall be no discharge of floating solids or visible foam in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location:

Outfall 004, at the point of discharge prior to mixing with other waters.

PART I

Page 9 of 9

LA0099473/AI32219/PER20030003

FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

During the period beginning the effective date of the permit and lasting through the expiration date of the permit the permittee is authorized to discharge from:

Outfall 005, located on the southeast side of the site at Long. 90° 15' 30" & Lat 29° 55' 44", uncontaminated stormwater from non active areas (**expected flow** is 0.06 MGD).

Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Storet Code	Discharge Limitations			Monitoring Requirements	
		(lbs/day)	other units (specify)		Measurement Frequency*	Sample Type
Flow-MGD	50050	---	Report	Report	Daily	Estimate
TOC	00310	---	---	50 mg/l	1/month	Grab
Oil & Grease	00552	---	---	15 mg/l	1/month	Grab
TSS	00530	---	---	Report mg/l	1/month	Grab
Ammonia-Nitrogen	00610	---	---	Report mg/l	1/month	Grab
Turbidity(NTU)	00070	---	---	Report	1/month	Grab
Magnesium (Total)	00927	---	---	Report***	1/6 months	24-hr comp.
Magnesium (Dissolved)	00925	---	---	Report***	1/6 months	24-hour comp.
Nitrate plus Nitrite-Nitrogen	00630	---	---	Report ***	1/6 months	24-hr. comp.
TDS	00525	---	---	Report ***	1/6 months	24-hr. comp.
Total Arsenic	01002	---	---	Report ***	1/6 months	24-hr. comp.
Total Barium	00000	---	---	Report ***	1/6 months	24-hr. comp.
Total Cadmium	01027	---	---	Report ***	1/6 months	24-hr. comp.
Total Chromium	01034	---	---	Report ***	1/6 months	24-hr. comp.
Total Cyanide	00720	---	---	Report ***	1/6 months	24-hr. comp.
Total Lead	01051	---	---	Report ***	1/6 months	24-hr. comp.
Total Mercury	71900	---	---	Report ***	1/6 months	24-hr. comp.
Total Selenium	01147	---	---	Report ***	1/6 months	24-hr. comp.
Total Silver	01077	---	---	Report ***	1/6 months	24-hr. comp.
pH (Standard Units)**	00400	---	---	---	1/month	Grab

\* Sample shall be taken when a discharge occurs.

\*\* The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units. The permittee shall report on the Discharge Monitoring Reports both the minimum and maximum instantaneous pH values measured.

\*\*\* Units of measurement are ug/l

There shall be no discharge of floating solids or visible foam in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location:

Outfall 005, at the point of discharge prior to mixing with other waters.

## PART II

### OTHER REQUIREMENTS

In addition to the standard conditions required in all permits and listed in Part III, the office has established the following additional requirements in accordance with the Louisiana Water Quality Regulations.

#### SECTION A. GENERAL STATEMENTS

1. The Department of Environmental Quality reserves the right to impose more stringent discharge limitations or additional restrictions, if necessary, to maintain the water quality integrity and the designated uses of the receiving water bodies.
2. This permit does not in any way authorize the permittee to discharge a pollutant not listed or quantified in the application or limited or monitored for in the permit.
3. Authorization to discharge pursuant to the conditions of this permit does not relieve the permittee of any liability for damages to state waters or private property. For discharges to private land, this permit does not relieve the permittee from obtaining proper approval from the landowner for appropriate easements and rights of way.
4. For definitions of monitoring and sampling terminology see Part III, Section F.
5. 24-hour Oral Reporting: Daily Maximum Limitation Violations

Under the provisions of Part III Section D.6.e.(3) of this permit, violations of daily maximum limitations for the following pollutants shall be reported orally to the Office of Environmental Compliance within 24 hours from the time the permittee became aware of the violation followed by a written report in five days.

Pollutants: Zinc and Phenol

6. As an exception to Part III Section D.6.e.(1), the permittee shall report all overflows in the collection system with the *Discharge Monitoring Report* submittal. These reports shall be summarized and reported in tabular format. The summaries shall include: the date, time, duration, location, estimated volume, and cause of the overflow; observed environmental impacts from the overflow; actions taken to address the overflow; and the ultimate discharge location if not contained (e.g., storm sewer system, ditch, tributary). All other overflows and overflows which endanger human health or the environment must be reported in the manner described in Part III, Section D.6 of the permit.
7. In accordance with La.R.S.40:1149, it shall be unlawful for any person, firm, or corporation, both municipal and private, operating a water supply system or sewerage system to operate same unless the competency of the operator is duly certified to by the State Health Officer. Furthermore, it shall be unlawful for any person to perform the duties of an operator without being duly certified. Therefore, River Birch, Inc. should take whatever action is necessary to comply with La.R.S. 40:1149.



## Part II

Page 2 of 29

LA0099473/AI 32219

Permit Activity Number 20030003

### OTHER REQUIREMENTS (continued)

8. Any runoff leaving the site, other than the permitted outfalls, exceeding 15 mg/l Oil and Grease, or having a pH less than 6.0 or greater than 9.0 standard units shall be a violation of this permit.

9. CHLORIDE LIMITATION

Through submittal of a permit application addendum dated March 14, 2002, the permittee requested a change in the previous permit limit for Chlorides from 250 mg/l to 850 mg/l. This request was granted in a permit modification issued November 19, 2003. This change was due to naturally high chloride concentrations in the pore water beneath the site and in the receiving stream - Sauls Canal. (Documentation was submitted based upon samples taken from the pore/groundwater as well as various locations along Sauls Canal).

Also, granted in that permit modification was a variance from the water quality standard for Chlorides in segment 020501 which includes Sauls Canal and other waterbodies located in segment 0205. This was due to the questionable appropriateness of the standard. The variance was authorized under LAC 33:IX.1109.D.2. and is valid for a period not to exceed three years. During this time a resolution of the appropriateness of the Chloride standard will be devised. At the end of the three years, this permit will be modified to reflect the change in the standard for Chloride.

10. Future water quality studies may indicate potential toxicity from the presence of residual chlorine in the treatment facility's effluent. Therefore, the permittee is hereby advised that a future Total Residual Chlorine Limit may be required if chlorine is used as a method of disinfection. In many cases, this becomes a NO MEASURABLE Total Residual Chlorine Limit. If such a limit were imposed, the permittee would be required to provide for dechlorination of the effluent prior to a discharge.
11. REOPENER CLAUSE: The Department of Environmental Quality reserves the right to modify or revoke and reissue this permit based upon the results of the change in the standard for Chlorides in segment 020501.
12. OIL AND GREASE ALTERNATIVE TEST PROCEDURE, METHOD 1664 Proposed Method 1664 [Federal Register, Vol. 61, No. 15, January 23, 1996, page 1730] may be used as an oil and grease alternative test procedure for permit compliance monitoring purposes. This approval shall expire at the time of the publication in the Federal Register of the final rule governing the use of Method 1664. This approval includes all of the analytical options within Method 1664, including solid phase extraction, provided that the equivalency demonstration is performed and all performance specifications are met.
13. The permittee shall achieve compliance with the effluent limitations and monitoring requirements specified for discharges in accordance with the following schedule:

Part II.

Page 3 of 29

LA0099473/AI32219

Permit Activity Number 20030003

OTHER REQUIREMENTS (continued)

This facility discharges into a water body which has a designated use of Primary contact recreation. According to LAC 33:IX. 1113.C.5.b.i., fecal coliform standards for this waterbody are 200/100 ml abd 400/100 ml. Therefore, limits were placed in the draft permit, however, this was not a previous permit requirement for this facility. In order to give the permittee time to comply with the final effluent limitations established for this pollutant, a compliance schedule has been added to the final permit.

The permittee shall achieve compliance with the FINAL EFFLUENT LIMITATIONS and MONITORING REQUIREMENTS as specified in accordance with the following schedule:

ACTIVITY	DATE
Achieve Interim Effluent Limitations and Monitoring Requirements	Effective date of permit
Achieve Final Effluent Limitations and Monitoring Requirements	24 months from the effective date of the permit

The permittee shall achieve compliance with the final effluent limitations specified for **Fecal coliform limits** within twenty-four months after the effective date of this permit.

The permittee shall initiate and continue ongoing activities designed to achieve sustained compliance with final effluent limitations for **Fecal coliform limits** no later than twenty-four months after the effective date of this permit.

The permittee shall submit a progress report outlining the status of the activities during the months of January, April, July, and October until compliance is achieved.

No later than fourteen calendar days following the date for compliance for **fecal coliform limits**, the permittee shall submit a written notice of compliance or noncompliance.

14. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form (EPA No. 3320-1 or an approved substitute). All monitoring reports must be retained for a period of at least three (3) years from the date of the sample measurement. The permittee shall make available to this Office, upon request, copies of all monitoring data required by this permit.

If there is a no discharge event at any of the monitored outfall(s) during the reporting period, enter NO DISCHARGE in the upper right corner of the Discharge Monitoring Report.

Discharge Monitoring Report (DMR) forms shall be prepared and submitted for each outfall per the instructions and submission schedules below:

- a. For sampling frequencies less than or equal to once per month, one DMR for per month (summarize monitoring results monthly) must be prepared and submitted quarterly.

**Part II**

**Page 4 of 29**

**LA0099473/AI32219**

**Permit Activity Number 20030003**

**OTHER REQUIREMENTS (continued)**

- b. For quarterly or once per 3 months sampling frequencies, one DMR form per quarter must be prepared and submitted quarterly.
- c. For semi-annual or once per 6 months monitoring frequencies, one DMR form per six month period must be prepared and submitted semi-annually.
- d. For annual or once per year monitoring frequencies, one DMR form per year must be submitted annually.

Quarterly Submission Schedule

<u>Monitoring Period</u>	<u>DMR Due Date</u>
January, February, March	April 28th
April, May, June	July 28th
July, August, September	October 28th
October, November, December	January 28 <sup>th</sup>

Semiannual Submission Schedule

<u>Monitoring Period</u>	<u>DMR Due Date</u>
January - June	July 28th
July - December	January 28th

Annual Submission Schedule

<u>Monitoring Period</u>	<u>DMR Due Date</u>
January - December	January 28th

Duplicate copies of DMRs (one set of originals and one set of copies) signed and certified as required by LAC 33:IX.2503.B, and all other reports (one set of originals) required by this permit shall be submitted to the Permit Compliance Unit, and the appropriate LDEQ regional office (one set of copies) at the following address:

Department of Environmental Quality  
Office of Environmental Compliance  
Post Office Box 4312  
Baton Rouge, Louisiana 70821-4312  
Attention: Permit Compliance Unit

Southeast Regional Office  
Office of Environmental Compliance  
Surveillance Division  
201 Evans Road  
Bldg. 4, Suite 420  
New Orleans, Louisiana 70123-5230

## Part II

Page 5 of 29

LA0099473/AI32219

Permit Activity Number 20030003

### OTHER REQUIREMENTS (continued)

#### SECTION B. POLLUTANT SCAN

This Office has established a list of priority pollutants with threshold values intended as action levels. Should a substance exceed the level of the established value in Part II, Section B.3., the permittee shall notify the Office of Environmental Services of the exceedance, in writing, within five (5) days. At this time River Birch Landfill, Inc. – River Birch Landfill shall institute a study to determine the source of the exceedance. Within sixty (60) days of the written notification the permittee shall submit a written account of the nature of the study, and measures being taken to secure abatement. Failure to comply with any provision of this paragraph shall constitute a violation of this permit. The Department reserves the right to establish effluent limitations for any of the parameters listed below based upon the results of submitted analyses.

##### 1. 40 CFR Part 136 Analytical Requirements

Unless otherwise specified in this permit, monitoring shall be conducted according to analytical, apparatus and materials, sample collection, preservation, handling, etc., procedures listed at 40 CFR Part 136 in effect on the effective date of this permit. Appendices A, B, and C to Part 136 are specifically referenced as part of this requirement. Amendments to 40 CFR Part 136 promulgated after the effective date of this permit shall supersede these requirements as applicable. The permittee may use other EPA approved test methods that provide more sensitive test results than those referenced in the permit.

##### 2. Minimum Quantification Levels

If any individual analytical test result is less than the minimum quantification level (MQL) listed below, a value of zero (0) may be used as the test result for those parameters for the Discharge Monitoring Report (DMR) calculations and reporting requirements.

##### 3. Priority Pollutant List

Chemical	Threshold Value ug/l	MQL Required ug/l	Test Method Required
METALS, CYANIDE, AND TOTAL PHENOLS			
Antimony	600	60	200.7
Arsenic	100	10	206.2
Beryllium	100	5	200.7

**Part II**

Page 6 of 29

LA0099473/AI32219

Permit Activity Number 20030003

**OTHER REQUIREMENTS (continued)**

Chemical	Threshold Value ug/l	MQL Required ug/l	Test Method Required
<b>METALS, CYANIDE, AND TOTAL PHENOLS (continued)</b>			
Cadmium	13.36	1	213.2
Chromium III	3674	10	200.7
Chromium VI	15.64	10	200.7
Copper	172.9	10	220.2
Cyanide	8.61	20	335.2
Lead	83.33	5	239.2
Mercury	0.055	0.2	245.1
Nickel (Freshwater)	500	40	200.7
Selenium	100	5	270.2
Silver	100	2	272.2
Thallium	100	10	279.2
Zinc	1230.5	20	289.2
Total Phenols**	50	5	420.1
<b>VOLATILE COMPOUNDS</b>			
Acrolein	100	50	624
Acrylonitrile	100	50	624

Part II

Page 7 of 29

LA0099473/A132219

Permit Activity Number 20030003

OTHER REQUIREMENTS (continued)

Chemical	Threshold Value ug/l	MQL Required ug/l	Test Method Required
VOLATILE COMPOUNDS (continued)			
Benzene	30.77	10	624
Bromodichloromethane	8.12	10	624
Bromoform	85.42	10	624
Carbon Tetrachloride	2.95	10	624
Chlorobenzene	100	50	624
Chloroethane	100	10	624
2-Chloroethyl vinyl ether	100	50	624
Chloroform	100	10	624
Dibromochloromethane	12.5	10	624
1,1-Dichloroethane	100	10	624
1,2-Dichloroethane	16.74	10	624
1,1-Dichloroethylene {1,1-dichloroethene}	1.43	10	624
1,2-Dichloropropane	100	10	624
1,3-Dichloropropene {1,3-Dichloropropylene}	100	10	624
Ethylbenzene	100	10	624

Part II

Page 8 of 29

LA0099473/AI32219

Permit Activity Number 20030003

OTHER REQUIREMENTS (continued)

Chemical	Threshold Value ug/l	MQL Required ug/l	Test Method Required
VOLATILE COMPOUNDS (continued)			
Methyl Bromide {Bromomethane}	100	50	624
Methyl Chloride {Chloromethane}	100	50	624
Methylene Chloride	100	20	624
1,1,2,2-Tetra-chloroethane	4.43	10	624
Tetrachloroethylene	6.15	10	624
Toluene	100	10	624
1,2-trans-Dichloroethylene {1,2-dichloroethene}	100	10	624
1,1,1-Trichloroethane	100	10	624
1,1,2-Trichloroethane	16.99	10	624
Trichloroethylene {Trichloroethene}	51.69	10	624
Vinyl Chloride	88.13	10	624
ACID COMPOUNDS			
2-Chlorophenol {o-Chlorophenol}	100	10	625
2,4-Dichlorophenol	100	10	625

Part II

Page 9 of 29

LA0099473/AI32219

Permit Activity Number 20030003

OTHER REQUIREMENTS (continued)

Chemical	Threshold Value ug/l	MQL Required ug/l	Test Method Required
ACID COMPOUNDS (continued)			
2,4-Dimethylphenol	100	10	625
2,4-Dinitrophenol	100	50	625
4,6-Dinitro-o-Cresol {4,6-Dinitro-o-phenol} {4,6-Dinitro-2-methyl phenol}	100	50	625
2-Nitrophenol	100	20	625
4-Nitrophenol	100	50	625
P-Chloro-M-Cresol	100	10	625
Pentachlorophenol	100	50	625
Phenol	100	10	625
2,4,6-Trichlorophenol	100	10	625
PESTICIDES			
Aldrin	0.00098	0.05	608
Chlordane	0.00047	0.2	608
DDD	0.00066	0.1	608
DDE	0.00047	0.1	608
DDT	0.00047	0.1	608



Part II

Page 10 of 29

LA0099473/AI32219

Permit Activity Number 20030003

OTHER REQUIREMENTS (continued)

Chemical	Threshold Value ug/l	MQL Required ug/l	Test Method Required
PESTICIDES (continued)			
Dieldrin	0.00012	0.1	608
Endosulfan- $\alpha$	0.056	0.1	608
Endosulfan- $\beta$	0.056	0.1	608
Total Endosulfan	0.093	0.1	608
Endosulfan sulfate	10	0.1	608
Endrin	0.062	0.1	608
Endrin aldehyde	10	0.1	608
Heptachlor	0.00017	0.05	608
Heptachlor Epoxide	10	0.05	608
Hexachlorocyclohexane- $\alpha$ (BHC- $\alpha$ )	10	0.05	608
Hexachlorocyclohexane- $\beta$ (BHC- $\beta$ )	10	0.05	608
Hexachlorocyclohexane- $\delta$ (BHC- $\delta$ )	10	0.05	608
Hexachlorocyclohexane- $\gamma$ (Lindane)	0.347	0.05	608
Total PCB's	*There shall be no discharge of polychlorinated biphenyls (PCB's)*		
Toxaphene	0.0003	5.0	608

Part II

Page 11 of 29

LA0099473/AI32219

Permit Activity Number 20030003

OTHER REQUIREMENTS (continued)

Chemical	Threshold Value ug/l	MQL Required ug/l	Test Method Required
BASE/NEUTRAL COMPOUNDS			
Acenaphthene	100	10	625
Acenaphthylene	100	10	625
Anthracene	100	10	625
Benzidene	0.00042	50	625
Benzo(a)anthracene	100	10	625
3,4-Benzofluoranthene {Benzo(b)fluoranthene}	100	10	625
Benzo(k)fluoranthene	100	10	625
Benzo(a)pyrene	100	10	625
Benzo(ghi)perylene	100	20	625
Benzyl butyl Phthalate {Butyl benzyl Phthalate}	100	10	625
Bis(2-chloroethyl) ether	100	10	625
Bis(2-chloroethoxy) methane	100	10	625
Bis(2-ethylhexyl) Phthalate	100	10	625
Bis(2-chloroisopropyl) ether	100	10	625

Part II

Page 12 of 29

LA0099473/AI32219

Permit Activity Number 20030003

OTHER REQUIREMENTS (continued)

Chemical	Threshold Value ug/l	MLQ Required ug/l	Test Method Required
BASE/NEUTRAL COMPOUNDS (continued)			
4-Bromophenyl phenyl ether	100	10	625
2-Chloronaphthalene	100	10	625
4-Chlorophenyl phenyl ether	100	10	625
Chrysene	100	10	625
Dibenzo (a,h) anthracene	100	20	625
Di-n-Butyl Phthalate	100	10	625
1,2-Dichlorobenzene	100	10	625
1,3-Dichlorobenzene	100	10	625
1,4-Dichlorobenzene {p-Dichlorobenzene}	100	10	625
3,3-Dichlorobenzidine	100	50	625
Diethyl Phthalate	100	10	625
Dimethyl Phthalate	100	10	625
2,4-Dinitrotoluene	100	10	625
2,6-Dinitrotoluene	100	10	625
Di-n-octyl Phthalate	100	10	625

Part II

Page 13 of 29

LA0099473/AI32219

Permit Activity Number 20030003

OTHER REQUIREMENTS (continued)

Chemical	Threshold Value ug/l	MQL Required ug/l	Test Method Required
BASE/NEUTRAL COMPOUNDS (continued)			
1,2-Diphenylhydrazine	100	20	625
Fluoranthene	100	10	625
Fluorene	100	10	625
Hexachlorobenzene	0.00062	10	625
Hexachlorobutadiene	0.27	10	625
Hexachlorocyclopentadiene	100	10	625
Hexachloroethane	100	20	625
Ideno (1,2,3-cd) pyrene	100	20	625
Isophorone	100	10	625
Naphthalene	100	10	625
Nitrobenzene	100	10	625
N-nitrosodimethylamine	100	50	625
N-nitrosodiphenylamine	100	20	625
N-nitrosodi-n-propylamine	100	20	625
Phenanthrene	100	10	625
Pyrene	100	10	625

**Part II**

**Page 14 of 29**

**LA0099473/AI32219**

**Permit Activity Number 20030003**

**OTHER REQUIREMENTS (continued)**

Chemical	Threshold Value ug/l	MQL Required ug/l	Test Method Required
1,2,4-Trichlorobenzene	100	10	625

**5. Effluent Specific Minimum Quantification Levels**

The permittee may develop an effluent specific method detection limit (MDL) in accordance with Appendix B to 40 CFR Part 136. For any pollutant for which the permittee determines an effluent specific MDL, the permittee shall send the Department of Environmental Quality a report containing the QA/QC documentation, analytical results, and calculations necessary to demonstrate that the effluent MDL was correctly calculated. An effluent specific MQL shall be determined in accordance with the following calculation:

$$\text{MQL} = 3.3 \times \text{MDL}$$

Upon written approval from DEQ, the effluent specific MQL may be utilized by the permittee for all future Discharge Monitoring Report (DMR) calculations and reporting requirements.

**Part II**

**Page 15 of 29**

**LA0099473/AI32219**

**Permit Activity Number 20030003**

**OTHER REQUIREMENTS (continued)**

**SECTION C. STORMWATER PROVISIONS**

**STORMWATER DISCHARGES**

- A. This section applies to all stormwater discharges from the facility, either through permitted outfalls or through outfalls which are not listed in the permit or as sheet flow.
- B. Any runoff leaving the developed areas of the facility, other than the permitted outfall(s), exceeding 50 mg/L TOC, 15 mg/L Oil and Grease, or having a pH less than 6.0 or greater than 9.0 standard units shall be a violation of this permit. Any discharge in excess of these limitations, which is attributable to offsite contamination, shall not be considered a violation of this permit. A visual inspection of the facility shall be conducted and a report made annually as described in Paragraph 4 below.
- C. The permittee shall prepare, implement, and maintain a Storm Water Pollution Prevention Plan (SWP3) within six (6) months of the effective date of the final permit. The terms and conditions of the SWP3 shall be an enforceable Part of the permit. EPA document 833-R-92-002 (Storm Water Management for Industrial Activities) may be used as a guidance and may be obtained by writing to the U.S. Environmental Protection Agency, Office of Water Resources (RC-4100), 401 M Street, S.W., Washington D.C. 20460 or by calling (202) 260-7786.
- D. The following conditions are applicable to all facilities and shall be included in the SWP3 for the facility.
  - 1. The permittee shall conduct an annual inspection of the facility site to identify areas contributing to the storm water discharge from developed areas of the facility and evaluate whether measures to reduce pollutant loadings identified in the SWP3 are adequate and have been properly implemented in accordance with the terms of the permit or whether additional control measures are needed.
  - 2. The permittee shall develop a site map which includes all areas where stormwater may contact potential pollutants or substances which can cause pollution. Any location where reportable quantities leaks or spills have previously occurred are to be documented in the SWP3. the SWP3 shall contain a description of the potential pollutant sources, including, the type and quantity of material present and what action has been taken to assure stormwater precipitation will not directly contact the substances and result in contaminated runoff.

**Part II**

**Page 16 of 29**

**LA0099473/AI32219**

**Permit Activity Number 20030003**

**OTHER REQUIREMENTS (continued)**

3. Where experience indicates a reasonable potential for equipment failure (e.g. a tank overflow or leakage), natural condition of (e.g. precipitation), or other circumstances which result in significant amounts of pollutants reaching surface waters, the SWP3 should include a prediction of the direction, rate of flow and total quantity of pollutants which could be discharged from the facility as a result of each condition or circumstance.
4. The permittee shall maintain for a period of three years a record summarizing the results of the inspection and a certification that the facility is in compliance with the SWP3 and the permit, and identifying any incidents of noncompliance. The summary report should contain, at a minimum, the date and time of inspection, name of inspector(s), conditions found, and changes to be made to the SWP3.
5. The summary report and the following certification shall be signed in accordance with LAC 33:IX.2503. The summary report is to be attached to the SWP3 and provided to the Department upon request.

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Signatory requirements for the certification may be found in Part III, Section D.10 of this permit.

6. The permittee shall make available to the Department, upon request, a copy of the SWP3 and any supporting documentation.
- D. The following shall be included in the SWP3, if applicable.
1. The permittee shall utilize all reasonable methods to minimize any adverse impact on the drainage system including but not limited to:
    - a) maintaining adequate roads and driveway surfaces;
    - b) removing debris and accumulated solids from the drainage system; and

## Part II

Page 17 of 29

LA0099473/AI32219

Permit Activity Number 20030003

### OTHER REQUIREMENTS (continued)

- c) cleaning up immediately any spill by sweeping, absorbent pads, or other appropriate methods.
2. All spilled product and other spilled wastes shall be immediately cleaned up and disposed of according to all applicable regulations, Spill Prevention and Control (SPC) plans or Spill Prevention Control and Countermeasures (SPCC) plans. Use of detergents, emulsifiers, or dispersants to clean up spilled product is prohibited except where necessary to comply with State or Federal safety regulations (i.e., requirement for non-slippery work surface). In all such cases, initial cleanup shall be done by physical removal and chemical usage shall be minimized.
3. All waste fuel, lubricants, coolants, solvents, or other fluids used in the repair or maintenance of vehicles or equipment shall be recycled or contained for proper disposal. Spills of these materials are to be cleaned up by dry means whenever possible.
4. All equipment, parts, dumpsters, trash bins, petroleum products, chemical solvents, detergents, or other materials exposed to stormwater shall be maintained in a manner which prevents contamination of stormwater by pollutants.
5. All storage tank installations (with a capacity greater than 660 gallons for an individual container, or 1,320 gallons for two or more containers in aggregate within a common storage area) shall be constructed so that a secondary means of containment is provided for the entire contents of the largest tank plus sufficient freeboard to allow for precipitation. Diked areas should be sufficiently impervious to contain spills.
6. All diked areas surrounding storage tanks or stormwater collection basins shall be free of residual oil or other contaminants so as to prevent the accidental discharge of these materials in the event of flooding, dike failure, or improper draining of the diked area. All drains from diked areas shall be equipped with valves which shall be kept in the closed condition except during periods of supervised discharge.
7. All check valves, tanks, drains, or other potential sources of pollutant releases shall be inspected and maintained on a regular basis to assure their proper operation and to prevent the discharge of pollutants.
8. The permittee shall assure compliance with all applicable regulations promulgated under the Louisiana Solid Waste and Resource Recovery



**Part II**

**Page 18 of 29**

**LA0099473/AI32219**

**Permit Activity Number 20030003**

**OTHER REQUIREMENTS (continued)**

Law and the Hazardous Waste Management Law (L.R.S. 30:2151; etc.). Management practices required under above regulations shall be referenced in the SWP3.

9. The permittee shall amend the SWP3 whenever there is a change in the facility or change in the operation of the facility which materially increases the potential for the ancillary activities to result in a discharge of significant amounts of pollutants.
10. If the SWP3 proves to be ineffective in achieving the general objectives of preventing the release of significant amounts of pollutants to water of the state, then the specific objectives and requirements of the SWP3 shall be subject to modification to incorporate revised SWP3 requirements.

**F. Facility specific SWP3 Conditions:**

1. **Drainage Area Site Map.** Identify locations of the following activities where such activities are exposed to precipitation / runoff: active and closed landfill cells or trenches, active and closed land application areas, locations where open dumping is occurring or has occurred, locations of any known leachate springs or other areas where uncontrolled leachate may commingle with runoff, leachate collection and handling systems.
2. **Summary of Potential Pollutant Sources.** A narrative description of the potential pollutant associated with any of the following: fertilizer, herbicide and pesticide application; earth/soil moving; waste hauling and loading/unloading; outdoor storage of significant materials including daily, interim and final cover material stockpiles as well as temporary waste storage areas; exposure of active and inactive landfill and land application areas; uncontrolled leachate flows; failure or leaks from leachate collection and treatment systems
3. **Good Housekeeping Measures.** As part of your good housekeeping program, consider providing protected materials storage areas for pesticides, herbicides, fertilizer, and other significant materials.
4. **Preventative Maintenance Program.** This program must also maintain: 1) containers used for outdoor chemical and significant materials storage to prevent leaking or rupture; 2) all elements of leachate collection and treatment systems to prevent commingling

**Part II**

**Page 19 of 29**

**LA0099473/AI32219**

**Permit Activity Number 20030003**

**OTHER REQUIREMENTS (continued)**

of leachate with storm water; 3) the integrity and effectiveness of any intermediate or final cover (including repairing the cover as necessary to minimize the effects of settlement, sinking and erosion).

5. **Inspections of Active Sites:** for operating landfills, open dumps, and land application sites, inspections must be conducted at least once every 7 days. Qualified personnel must inspect areas of landfills that have not yet been finally stabilized, active land application areas, areas used for storage of material / wastes that are exposed to precipitation, stabilization and structural control measures, leachate collection and treatment systems, and locations where equipment and waste trucks enter and exit the site. Ensure that sediment and erosion control measures are operating properly. For stabilized sites and areas where land application has been completed, conduct inspections at least once every month.
6. **Sediment and Erosion Control Plan:** Provide temporary stabilization (e.g., consider temporary seeding, mulching, and placing geotextiles on the inactive portions of stockpiles): for materials stockpiled for daily, intermediate and final cover; inactive areas of the landfill or open dump; any landfill or open dump area that has received a final cover until vegetation has established itself; and where waste application has been completed at land application sites but final vegetation has not yet been established.
7. Include plans for the possibility for and control of the upward and lateral seepage of leachate. As a part of the plans, a method of prediction (estimation) of the direction of flow, rate of flow, and total quantity of storm water being contaminated by toxic pollutants reaching the surface through the process of seepage.
8. Include an outline plan of action to address pollutants which exceed the threshold criteria of the priority pollutants (Part II, Section B. 3.).

**OTHER REQUIREMENTS (continued)**

**SECTION D. WHOLE EFFLUENT TOXICITY TESTING(7-DAY CHRONIC NOEC: FRESHWATER)**

**1. SCOPE AND METHODOLOGY**

- a. The permittee shall test the effluent for toxicity in accordance with the provisions in this section.

APPLICABLE TO OUTFALL(S):	OUTFALL 001
REPORTED ON DMR AS OUTFALL:	TX1Q
CRITICAL DILUTION:	100%
EFFLUENT DILUTION SERIES:	31%, 42%, 56%, 75%, 100%
COMPOSITE SAMPLE TYPE:	Defined at Section D.2.d.i
TEST SPECIES/METHODS:	LAC 33:IX.4901 (40 CFR Part 136)

Ceriodaphnia dubia chronic static renewal survival and reproduction test, Method 1002.0, EPA 821-R-02-013 or the most recent update thereof. This test should be terminated when 60% of the surviving females in the control produce three broods or at the end of eight days, whichever comes first.

Pimephales promelas (Fathead minnow) chronic static renewal 7-day larval survival and growth test, Method 1000.0, EPA 821-R-02-013, or the most recent update thereof. A minimum of five (5) replicates with ten (10) organisms per replicate must be used in the control and in each effluent dilution of this test.

- b. The NOEC (No Observed Effect Concentration) is defined as the greatest effluent dilution at and below which lethality that is statistically different from the control (0% effluent) at the 95% confidence level does not occur.
- c. This permit may be reopened to require whole effluent toxicity limits, chemical specific effluent limits, additional testing, and/or other appropriate actions to address toxicity.
- d. Test failure is defined as a demonstration of statistically significant sub-lethal or lethal effects to a test species at or below the effluent critical dilution.

**2. PERSISTENT LETHALITY**

The requirements of this section apply only when a toxicity test demonstrates significant lethal effects at or below the critical dilution. Significant lethal effects will be demonstrated if there is a statistically significant difference at the 95% confidence level between the survival of the appropriate test organism in a specified effluent dilution and the control (0% effluent).

**Part II**

Page 21 of 29

LA0099473/AI32219

Permit Activity Number 20030003

**OTHER REQUIREMENTS (continued)**

**a. PART I TESTING FREQUENCY OTHER THAN MONTHLY**

- i. The permittee shall conduct a total of two (2) additional tests for any species that demonstrates significant lethal effects at or below the critical dilution. The two additional tests shall be conducted monthly during the next two consecutive months. The permittee shall not substitute either of the two additional tests in lieu of routine toxicity testing, unless the specified testing frequency for the species demonstrating significant lethal effects is monthly. The full report shall be prepared for each test required by this section in accordance with procedures outlined in item 4 of this section and submitted with the period discharge monitoring report (DMR) to the permitting authority for review.
- ii. If one or both of the two additional tests demonstrates significant lethal effects at or below the critical dilution, the permittee shall initiate Toxicity Reduction Evaluation (TRE) requirements as specified in item 5 of this section. The permittee shall notify the Department of Environmental Quality, Office of Environmental Services in writing within 5 days of the failure of any retest, and the TRE initiation date will be the test completion date of the first failed retest. A TRE may also be required due to a demonstration of persistent significant sub-lethal effects or intermittent lethal effects at or below the critical dilution, or for failure to perform the required retests.
- iii. If one or both of the two additional tests demonstrates significant lethal effects at or below the critical dilution, the permittee shall henceforth increase the frequency of testing for this species to once per quarter for the life of the permit.
- iv. The provisions of item 2.a are suspended upon completion of the two additional tests and submittal of the TRE Action Plan.

**b. PART I TESTING FREQUENCY OF MONTHLY**

If the testing frequency is monthly for a species, the permittee shall initiate the Toxicity Reduction Evaluation (TRE) requirements as specified in item 5 of this section when any two of three consecutive monthly toxicity tests exhibit significant lethal effects at or below the critical dilution. A TRE may also be required due to a demonstration of persistent significant sub-lethal effects or intermittent lethal effects at or below the critical dilution, or for failure to perform the required retests.

OTHER REQUIREMENTS (continued)

3. REQUIRED TOXICITY TESTING CONDITIONS

a. Test Acceptance

The permittee shall repeat a test, including the control and all effluent dilutions, if the procedures and quality assurance requirements defined in the test methods or in this permit are not satisfied, including the following additional criteria:

- i. The toxicity test control (0% effluent) must have survival equal to or greater than 80%.
- ii. The mean number of Ceriodaphnia dubia neonates produced per surviving female in the control (0% effluent) must be 15 or more.
- iii. 60% of the surviving control females must produce three broods.
- iv. The mean dry weight of surviving Fathead minnow larvae at the end of the 7 days in the control (0% effluent) must be 0.25 mg per larva or greater.
- v. The percent coefficient of variation between replicates shall be 40% or less in the control (0% effluent) for: the young of surviving females in the Ceriodaphnia dubia reproduction test; the growth and survival endpoints of the Fathead minnow test.
- vi. The percent coefficient of variation between replicates shall be 40% or less in the critical dilution, unless significant lethal or nonlethal effects are exhibited for: the young of surviving females in the Ceriodaphnia dubia reproduction test; the growth and survival endpoints of the Fathead minnow test.

Test failure may not be construed or reported as invalid due to a coefficient of variation value of greater than 40%. A repeat test shall be conducted within the required reporting period of any test determined to be invalid.

b. Statistical Interpretation

- i. For the Ceriodaphnia dubia survival test, the statistical analyses used to determine if there is a significant difference between the control and the critical dilution shall be Fisher's Exact Test as described in EPA 821-R-02-013, or the most recent update thereof.

If the conditions of Test Acceptability are met in Item 3.a above and the percent survival of the test organism is equal to or greater than 80% in the critical dilution and all lower dilution concentrations, the test shall be considered to be a passing test, and the permittee shall report an NOEC of not less than the critical dilution for the DMR reporting requirements found in Item 4 below.

Part II

Page 23 of 29

LA0099473/AI32219

Permit Activity Number 20030003

OTHER REQUIREMENTS (continued)

- ii. For the Ceriodaphnia dubia reproduction test and the Fathead minnow larval survival and growth test, the statistical analyses used to determine if there is a significant difference between the control and the critical dilution shall be in accordance with the methods for determining the No Observed Effect Concentration (NOEC) as described in EPA 821-R-02-013, or the most recent update thereof.
- c. Dilution Water
  - i. Dilution water used in the toxicity tests will be receiving water collected as close to the point of discharge as possible but unaffected by the discharge. The permittee shall substitute synthetic dilution water of similar pH, hardness and alkalinity to the closest downstream perennial water for;
    - A. toxicity tests conducted on effluent discharges to receiving water classified as intermittent streams; and
    - B. toxicity tests conducted on effluent discharges where no receiving water is available due to zero flow conditions.
  - ii. If the receiving water is unsatisfactory as a result of instream toxicity (fails to fulfill the test acceptance criteria of item 3.a), the permittee may substitute synthetic dilution water for the receiving water in all subsequent tests provided the unacceptable receiving water test met the following stipulations:
    - A. a synthetic dilution water control which fulfills the test acceptance requirements of item 3.a was run concurrently with the receiving water control;
    - B. the test indicating receiving water toxicity has been carried out to completion (i.e., 7 days);
    - C. the permittee includes all test results indicating receiving water toxicity with the full report and information required by item 4 below; and
    - D. the synthetic dilution water shall have a pH, hardness and alkalinity similar to that of the receiving water or closest downstream perennial water not adversely affected by the discharge, provided the magnitude of these parameters will not cause toxicity in the synthetic dilution water.

**OTHER REQUIREMENTS (continued)**

d. Samples and Composites

- i. The permittee shall collect a minimum of three flow-weighted 24-hour composite samples from the outfall(s) listed at item 1.a above. A 24-hour composite sample consists of a minimum of 4 effluent portions collected at equal time intervals representative of a 24-hour operating day and combined proportional to flow or a sample continuously collected proportional to flow over a 24-hour operating day.
- ii. The permittee shall collect second and third 24-hour composite samples for use during 24-hour renewals of each dilution concentration for each test. The permittee must collect the 24-hour composite samples such that the effluent samples are representative of any periodic episode of chlorination, biocide usage or other potentially toxic substance discharged on an intermittent basis.
- iii. The permittee must collect the 24-hour composite samples so that the maximum holding time for any effluent sample shall not exceed 72 hours. The permittee must have initiated the toxicity test within 36 hours after the collection of the last portion of the first 24-hour composite sample. Samples shall be chilled to 0-6 degrees Centigrade during collection, shipping and/or storage.
- iv. If the flow from the outfall(s) being tested ceases during the collection of effluent samples, the requirements for the minimum number of effluent samples, the minimum number of effluent portions and the sample holding time are waived during that sampling period. However, the permittee must collect an effluent composite sample volume during the period of discharge that is sufficient to complete the required toxicity tests with daily renewal of effluent. When possible, the effluent samples used for the toxicity tests shall be collected on separate days if the discharge occurs over multiple days. The effluent composite sample collection duration and the static renewal protocol associated with the abbreviated sample collection must be documented in the full report required in item 4 of this section.
- v. MULTIPLE OUTFALLS TO BE COMBINED. The permittee shall combine the 24-hour composite effluent samples in proportion to the average flow from the outfalls listed in item 1.a above for the day the sample was collected. The permittee shall perform the toxicity test on the flow-weighted composite of the outfall samples.

**4. REPORTING**

- a. A valid test must be submitted during each reporting period. The permittee shall prepare a full report of the results of all tests conducted pursuant to this section in accordance with

Part II

Page 25 of 29

LA0099473/AI32219

Permit Activity Number 20030003

OTHER REQUIREMENTS (continued)

the Report Preparation Section of EPA 821-R-02-013, or the most current publication, for every valid or invalid toxicity test initiated whether carried to completion or not. The permittee shall retain each full report pursuant to the provisions of Part III.C of this permit. For any test which fails, is considered invalid, or which is terminated early for any reason, the full report must be submitted for agency review. The permittee shall submit the first full report to the following address:

Department of Environmental Quality  
Office of Environmental Compliance  
P.O. Box 4312  
Baton Rouge, Louisiana 70821-4312  
Attn: Permit Compliance Unit

- b. The permittee shall submit the results of each valid toxicity test on the subsequent monthly DMR for that reporting period in accordance with Part III. D.4 of this permit, as follows below. Submit retest information clearly marked as such with the following month's DMR. Only results of valid tests are to be reported on the DMR. The permittee shall submit the Table I summary sheet with each valid test.

i. Pimephales promelas (Fathead Minnow)

- A. If the No Observed Effect Concentration (NOEC) for survival is less than the critical dilution, enter a "1"; otherwise, enter a "0" for Parameter No. TLP6C.
- B. Report the NOEC value for survival, Parameter No. TOP6C.
- C. Report the NOEC value for growth, Parameter No. TPP6C.
- D. If the No Observed Effect Concentration (NOEC) for growth is less than the critical dilution, enter a "1"; otherwise, enter a "0" for Parameter No. TGP6C.
- E. Report the highest (critical dilution or control) Coefficient of Variation, Parameter No. TQP6C.

ii. Ceriodaphnia dubia

- A. If the NOEC for survival is less than the critical dilution, enter a "1"; otherwise, enter a "0" for Parameter No. TLP3B.
- B. Report the NOEC value for survival, Parameter No. TOP3B.
- C. Report the NOEC value for reproduction, Parameter No. TPP3B.



Part II

Page 26 of 29

LA0099473/AI32219

Permit Activity Number 20030003

OTHER REQUIREMENTS (continued)

- D. If the No Observed Effect Concentration (NOEC) for reproduction is less than the critical dilution, enter a "1"; otherwise, enter a "0" for Parameter No. TGP3B.
- E. Report the highest (critical dilution or control) Coefficient of Variation, Parameter No. TQP3B.
- iii. The permittee shall report the following results for all VALID toxicity retests on the DMR for that reporting period.
  - A. Retest #1 (STORET 22415): If the first monthly retest following failure of a routine test for either test species results in an NOEC for survival less than the critical dilution, report a "1"; otherwise, report a "0."
  - B. Retest #2 (STORET 22416): If the second monthly retest following failure of a routine test for either test species results in an NOEC for survival less than the critical dilution, report a "1"; otherwise, report a "0."

If, for any reason, a retest cannot be performed during the reporting period in which the triggering routine test failure is experienced, the permittee shall report it on the following reporting period's DMR, and the comments section of both DMRs shall be annotated to that effect. If retesting is not required during a given reporting period, the permittee shall leave these DMR fields blank.

The permittee shall submit the toxicity testing information contained in Table 1 of this permit with the DMR subsequent to each and every toxicity test reporting period. The DMR and the summary table should be sent to the address indicated in 4.a. The permittee is not required to send the first complete report nor summary tables to EPA.

Monitoring Frequency Reduction

- a. The permittee may apply for a testing frequency reduction upon the successful completion of the first four consecutive quarters of testing for one or both test species, with no lethal or sub-lethal effects demonstrated at or below the critical dilution. If granted, the monitoring frequency for that test species may be reduced to not less than once year for the less sensitive species (usually the Fathead minnow) and not less than twice per year for the more sensitive test species (usually the Ceriodaphnia dubia).
- b. CERTIFICATION - The permittee must certify in writing that no test failures have occurred and that all tests meet all test acceptability criteria in item 3.a above. In addition, the permittee must provide a list with each test performed including test initiation date, species, NOECs for lethal and sub-lethal effects, and the maximum coefficient of variation for the controls. Upon review and acceptance of this information the agency will issue a letter of confirmation of the

## Part II

Page 27 of 29

LA0099473/AI32219

Permit Activity Number 20030003

### OTHER REQUIREMENTS (continued)

monitoring frequency reduction. A copy of the letter will be forwarded to the agency's Permit Compliance Unit to update the permit reporting requirements.

- c. **SUB-LETHAL FAILURES** - If, during the first four quarters of testing, sub-lethal effects are demonstrated to a test species, two monthly retests are required. In addition, quarterly testing is required for that species until the effluent passes both the lethal and sub-lethal test endpoints for the affected species for four consecutive quarters. Monthly retesting is not required if the permittee is performing a TRE.
- d. **SURVIVAL FAILURES** - If any test fails the survival endpoint at any time during the life of this permit, two monthly retests are required and the monitoring frequency for the affected test species shall be increased to once per quarter until the permit is re-issued. Monthly retesting is not required if the permittee is performing a TRE.
- e. This monitoring frequency reduction applies only until the expiration date of this permit, at which time the monitoring frequency for both test species reverts to once per quarter until the permit is re-issued.

### 5. TOXICITY REDUCTION EVALUATION (TRE)

- a. Within ninety (90) days OF CONFIRMING LETHALITY IN THE RETESTS, the permittee shall submit a Toxicity Reduction Evaluation (TRE) Action Plan and Schedule for conducting a TRE. The TRE Action Plan shall specify the approach and methodology to be used in performing the TRE. A Toxicity Reduction Evaluation is an investigation intended to determine those actions necessary to achieve compliance with water quality-based effluent limits by reducing an effluent's toxicity to an acceptable level. A TRE is defined as a step-wise process which combines toxicity testing and analyses of the physical and chemical characteristics of a toxic effluent to identify the constituents causing effluent toxicity and/or treatment methods which will reduce the effluent toxicity. The TRE Action Plan shall lead to the successful elimination of effluent toxicity at the critical dilution and include the following:
  - i. **Specific Activities.** The plan shall detail the specific approach the permittee intends to utilize in conducting the TRE. The approach may include toxicity characterizations, identifications and confirmation activities, source evaluation, treatability studies, or alternative approaches. When the permittee conducts Toxicity Characterization Procedures the permittee shall perform multiple characterizations and follow the procedures specified in the documents "Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures" (EPA-600/6-91/003) and "Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I" (EPA-600/6-91/005), or alternate procedures. When the permittee conducts Toxicity Identification Evaluations and Confirmations, the permittee shall perform multiple identifications and follow the methods specified in the documents "Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/080) and "Methods for

Part II

Page 28 of 29

LA0099473/AI32219

Permit Activity Number 20030003

**OTHER REQUIREMENTS (continued)**

Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/081), as appropriate;

The documents referenced above may be obtained through the National Technical Information Service (NTIS) by phone at (703) 487-4650, or by writing:

U.S. Department of Commerce  
National Technical Information Service  
5285 Port Royal Road  
Springfield, Va. 22161

- ii. Sampling Plan (e.g., locations, methods, holding times, chain of custody, preservation, etc.). The effluent sample volume collected for all tests shall be adequate to perform the toxicity test, toxicity characterization, identification and confirmation procedures, and conduct chemical specific analyses when a probable toxicant has been identified;  
  
Where the permittee has identified or suspects specific pollutant(s) and/or source(s) of effluent toxicity, the permittee shall conduct, concurrent with toxicity testing, chemical specific analyses for the identified and/or suspected pollutant(s) and/or source(s) of effluent toxicity. Where lethality was demonstrated within 48 hours of test initiation, each 24 hour composite sample shall be analyzed independently. Otherwise the permittee may substitute a composite sample, comprised of equal portions of the individual 24 hour composite samples, for the chemical specific analysis;
  - iii. Quality Assurance Plan (e.g., QA/QC implementation, corrective actions, etc.); and
  - iv. Project Organization (e.g., project staff, project manager, consulting services, etc.).
- b. The permittee shall initiate the TRE Action Plan within thirty (30) days of plan and schedule submittal. The permittee shall assume all risks for failure to achieve the required toxicity reduction.
  - c. The permittee shall submit a quarterly TRE Activities Report, with the Discharge Monitoring Report in the months of January, April, July and October, containing information on toxicity reduction evaluation activities including:
    - i. any data and/or substantiating documentation which identifies the pollutant(s) and/or source(s) of effluent toxicity;
    - ii. any studies/evaluations and results on the treatability of the facility's effluent toxicity; and

**Part II**

Page 29 of 29

LA0099473/AI32219

Permit Activity Number 20030003

**OTHER REQUIREMENTS (continued)**

- iii. any data which identifies effluent toxicity control mechanisms that will reduce effluent toxicity to the level necessary to meet no significant lethality at the critical dilution.

The TRE Activities Report shall be submitted to the following addresses:

Department of Environmental Quality  
Office of Environmental Compliance  
P.O. Box 4312  
Baton Rouge, Louisiana 70821-4312  
Attn: Permit Compliance Unit

U.S. Environmental Protection Agency, Region 6  
Water Enforcement Branch  
1445 Ross Avenue  
Dallas, Texas 75202

- d. The permittee shall submit a Final Report on Toxicity Reduction Evaluation Activities no later than twenty-eight (28) months from confirming lethality in the retests, which provides information pertaining to the specific control mechanism selected that will, when implemented, result in reduction of effluent toxicity to no significant lethality at the critical dilution. The report will also provide a specific corrective action schedule for implementing the selected control mechanism.

A copy of the Final Report on Toxicity Reduction Evaluation Activities shall also be submitted to the above addresses.

- e. Quarterly testing during the TRE is a minimum monitoring requirement. EPA recommends that permittees required to perform a TRE not rely on quarterly testing alone to ensure success in the TRE, and that additional screening tests be performed to capture toxic samples for identification of toxicants. Failure to identify the specific chemical compound causing toxicity test failure will normally result in a permit limit for whole effluent toxicity limits per federal regulations at 40 CFR 122.44(d)(1)(v).

TABLE 1  
SUMMARY SHEET  
Ceriodaphnia dubia SURVIVAL AND REPRODUCTION TEST

PERMITTEE: \_\_\_\_\_  
 FACILITY SITE: \_\_\_\_\_  
 NPDES PERMIT NUMBER: \_\_\_\_\_ WP PERMIT NUMBER: \_\_\_\_\_  
 OUTFALL IDENTIFICATION: \_\_\_\_\_  
 OUTFALL SAMPLE IS FROM \_\_\_\_\_ SINGLE \_\_\_\_\_ MULTIPLE DISCHARGE  
 BIOMONITORING LABORATORY: \_\_\_\_\_  
 DILUTION WATER USED: \_\_\_\_\_ RECEIVING WATER \_\_\_\_\_ LAB WATER  
 CRITICAL DILUTION \_\_\_\_\_ % DATE TEST INITIATED \_\_\_\_\_

1. LOW-FLOW LETHALITY:

Is the mean survival at 7 days significantly less ( $p=0.05$ ) than the control survival at the low-flow or critical dilution?  
 \_\_\_\_yes \_\_\_\_no

PERCENT SURVIVAL-CERIODAPHNIA

TIME OF READING	PERCENT EFFLUENT					
	0 %	%	%	%	%	%
24-HOUR						
48-HOUR						
7-DAY						

2. LOW-FLOW NON-LETHALITY:

Is the mean number of young produced per female significantly less ( $p=0.05$ ) than the control's number of young per female for the low-flow or critical dilution? \_\_\_\_yes \_\_\_\_no

3. Are the test results to be considered valid? \_\_\_\_yes \_\_\_\_no

If X no (test invalid), what reasons for invalidity?

4. Is this a retest of a previous invalid test? \_\_\_\_yes \_\_\_\_no

Is this a retest of a previous test failure? \_\_\_\_yes \_\_\_\_no

5. Enter percent effluent corresponding to each NOEC (No Observed Effect Concentration) for Ceriodaphnia:

a.NOEC REPRODUCTION= \_\_\_\_% effluent

b.NOEC SURVIVAL = \_\_\_\_% effluent

**TABLE 1  
SUMMARY SHEET**

**Pimephales promelas ("fathead minnow") SURVIVAL AND GROWTH TEST**

PERMITTEE: \_\_\_\_\_  
 FACILITY SITE: \_\_\_\_\_  
 NPDES PERMIT NUMBER: \_\_\_\_\_ WP PERMIT NUMBER: \_\_\_\_\_  
 OUTFALL IDENTIFICATION: \_\_\_\_\_  
 OUTFALL SAMPLE IS FROM A \_\_\_\_\_ SINGLE \_\_\_\_\_ MULTIPLE DISCHARGE  
 BIOMONITORING LABORATORY: \_\_\_\_\_  
 DILUTION WATER USED: \_\_\_\_\_ RECEIVING WATER \_\_\_\_\_ LAB WATER  
 CRITICAL DILUTION: \_\_\_\_\_ % DATE TEST INITIATED \_\_\_\_\_

**1. LOW-FLOW LETHALITY:**

Is the mean survival at 7 days significantly less ( $p=0.05$ ) than the control survival at the low-flow or critical dilution?  
 \_\_\_\_\_ yes \_\_\_\_\_ no

PERCENT EFFLUENT	% SURVIVAL / REPLICATES				MEAN % SURVIVAL			CV %
	A	B	C	D	24-HR	48-HR	7 DAY	
0%								
%								
%								
%								
%								
%								

**2. LOW-FLOW NON-LETHALITY:**

Is the mean dry weight (growth) at 7 days significantly less ( $p=0.05$ ) than the control's dry weight (growth) for the low-flow or critical dilution? \_\_\_\_\_ yes \_\_\_\_\_ no

3. Are the test results to be considered valid? \_\_\_\_\_ yes \_\_\_\_\_ no If X no (test invalid), what reasons for invalidity?

4. Is this a retest of a previous invalid test? \_\_\_\_\_ yes \_\_\_\_\_ no

Is this a retest of a previous test failure? \_\_\_\_\_ yes \_\_\_\_\_ no

5. Enter percent effluent corresponding to each NOEC (No Observed Effect Concentration) for Pimephales:

a.NOEC GROWTH = \_\_\_\_\_ % effluent

b.NOEC SURVIVAL = \_\_\_\_\_ % effluent

# **VOLUME I**

## **SECTION III**

### **Response to LAC 33:VII-Regulations**

# **VOLUME I**

## **SECTION III**

### **Response to LAC 33:VII-Regulations**

#### **PART I**

##### **LAC 33:VII.519**



# APPENDIX B SOLID WASTE PERMIT APPLICATION – PART I

- A. Applicant (Permit Holder): River Birch, Incorporated
- B. Facility Name: River Birch Landfill
- C. Facility Location/Description: 2000 South Kenner Road, approximately ½ mile north of the intersection with U.S. Highway 90.
- D. Location: Sections 4,6,36,37 Township 13S Range 22E Parish Jefferson  
Coordinates: Latitude 29° 55' 18" Longitude 90° 16' 03"
- E. Mailing address: P. O. Box 1938, Gretna, Louisiana 70054
- F. Contact: Jim Ward
- G. Telephone: (504) 364-1140
- H. Type and Purpose of Operation: (check each applicable line)
- |           |  |               |
|-----------|--|---------------|
| Type I    | Industrial Landfill  | <u>X</u>      |
|           | Industrial Surface Impoundment                             | <u>X</u>      |
|           | Industrial Landfarm  | <u>      </u> |
| Type I-A  | Industrial Incinerator Waste Handling Facility             | <u>      </u> |
|           | Industrial Shredder/Compacter/Baler                        | <u>      </u> |
|           | Industrial Transfer Station                                | <u>      </u> |
| Type II   | Sanitary Landfill  | <u>X</u>      |
|           | Residential/Commercial Surface Impoundment                 | <u>X</u>      |
|           | Residential/Commercial Landfarm                            | <u>      </u> |
| Type II-A | Residential/Commercial Incinerator Waste Handling Facility | <u>      </u> |
|           | Residential/Commercial Shredder/Compacter/Baler            | <u>      </u> |
|           | Residential/Commercial Transfer Station                    | <u>      </u> |
|           | Residential/Commercial Refuse Derived Fuel                 | <u>      </u> |
| Type III  | Construction/Demolition Debris Landfill                    | <u>      </u> |
|           | Woodwaste Landfill   | <u>      </u> |
|           | Compost Facility   | <u>      </u> |
|           | Resource Recovery/Recycling Facility                       | <u>      </u> |
| Other     | Describe: <u>Not Applicable</u>                            | <u>      </u> |

I. Site Status: Owned X Leased \_\_\_\_\_ Lease Term \_\_\_\_\_ Years (if leased, state the number of years of the lease and provide a copy of the lease agreement);

J. Operational Status: Existing X Proposed \_\_\_\_\_

K. Total Acres 494 Processing Acres \_\_\_\_\_ Disposal Acres 399

Surface Impoundment Acres 27.8

L. Environmental Permits: NPDES/LPDES LA0099473

Title V Air 134-00223-VO

M. Letter attached from the Louisiana Resource Recovery and Development Authority (LRRDA) stating that the operation conforms with the applicable statewide plan:

Note: LRRDA was appealed by Acts 2001 No. 524.

N. Zoned: Yes X No \_\_\_\_\_

M-4 Industrial (Attachment 9 Volume II)

O. Types, Maximum Quantities (wet tons/week), and Sources of waste to be processed or disposed of by the facility:

	Processing		Disposal	
	On-site	Off-site	On-site	Off-site
Residential	N/A	N/A	N/A	0-50,000 tpw
Industrial	N/A	N/A	N/A	0-50,000 tpw
Commercial	N/A	N/A	N/A	0-50,000 tpw
Other (woodwaste & C/D)	N/A	N/A	N/A	N/A
Total			Not to exceed 50,000 tpw	

P. Service Area: Greater New Orleans and River Parishes.

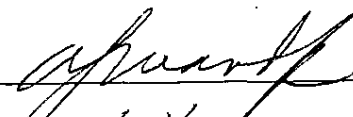
List of Parishes: Assumption, Jefferson, Lafourche, Orleans, Plaquemines, St. Bernard, St. Charles, St. James, St. John the Baptist, St. Martin, St. Mary, St. Tammany, and Terrebonne.

Q. Attach proof of publication of the notice regarding the submittal of the permit application as required in LAC 33:VII.513.A: Provided as Attachment 15.

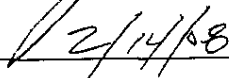
R. Certification: I have personally examined and am familiar with the information in the attached document, and I hereby certify under penalty of law that this information is true, accurate, and complete to the best of my knowledge. I am aware that there are significant penalties for submitting false information, including the possibility of fine and/or imprisonment.

Signatory authority is provided as Attachment 16

Signature



Date



Typed Name and Title Albert J. Ward, Jr., President

# **VOLUME I**

## **SECTION III**

### **Response to LAC 33:VII-Regulations**

#### **PART II**

##### **LAC 33:VII.521**

521.A.1.a.

**A. Location Characteristics.** Standards pertaining to location characteristics are contained in LAC 33:VII.709.A (Type I and II facilities), LAC 33:VII.717.A (Type I-A and II-A facilities, and LAC 33.719.A (Type III facilities).

**1. The following information on location characteristics is required for all facilities:**

**a. Area Master Plans--a location map showing the facility, road network, major drainage systems, drainage-flow patterns, location of closest population center(s), location of the public-use airport(s) used by turbojet aircraft or piston-type aircraft, proof of notification of affected airport and Federal Aviation Administration as provided in LAC 33:VII.709.A.2, location of the 100-year flood plain, and other pertinent information. The scale of the maps and drawings must be legible, and engineering drawings are required.**

Response:

The original River Birch landfill is located on a 323 acre tract of land in Jefferson Parish, Louisiana, approximately 1.5 miles south of the Mississippi River as shown in Figure 1. The West Expansion includes three (3) separate parcels totaling 174 acres giving the expanded site a total of 497 acres. The site is located in T13S, R22E, Sections 4, 6, 36, and 37. Legal descriptions of both the original site and West Expansion property are included in Attachment 1. A survey map of the original site is included as Figure 2 and Figure 2.1 shows the West Expansion property.

Access to the site is by existing all-weather roads by South Kenner Road from U.S. Highway 90 as shown in Figures 1 and 2. The roads can meet the demands of the facility and are designed to avoid, to the extent practicable, congestion, sharp turns, obstructions, or other hazards conducive to accidents; and the surface roadways are adequate to withstand the weight of transportation vehicles. Adequate lighting at the entrance to the facility was coordinated with the Jefferson Parish Department of Engineering.

Major drainage systems are shown in Figure 3. Currently, site drainage is to the Sauls Canal which flows to Waggaman Canal, which flows to the Cataouche Canal system, then finally to Bayou Verret, approximately 3 miles south of the site. As part of the original site development, Sauls Canal was rerouted along the northern and southeastern side of the site.

With respect to the proximity of the site to population centers, the site is located approximately 0.8 miles southwest of the Live Oak Manor subdivision, 2 miles west of Waggaman, and 2.5 miles south of Kenner. These areas are shown in Figure 1.

The nearest public use airport is New Orleans International Airport located across the Mississippi River, approximately 3 miles north of the site as shown in Figure 3. Proof of the original notification of the New Orleans airport and the Federal Aviation Administration (FAA) is provided in Attachment 2. A new notification for the West Expansion was sent to the Federal Aviation Administration and the New Orleans Aviation Board and is also included in Attachment No. 2.

The site is located in the 100-year floodplain with a 100-year flood elevation of 3.5' NGVD. This is shown on the FIRM Number 22051C0030E dated March 23, 1995 and attached as Figure 4.

**521.A.1.b.**

**b. A letter from the appropriate agency or agencies regarding those facilities receiving waste generated off-site, stating that the facility will not have a significant adverse impact on the traffic flow of area roadways and that the construction, maintenance, or proposed upgrading of such roads is adequate to withstand the weight of the vehicles.**

**Response:**

Access to the site is from South Kenner Road. The facility scale is located on the southwest side of Kenner Road with direct access to the landfill access road. This point is approximately ½ mile from U.S. Highway 90 to prevent transport vehicles from lining up on major roads.

Letters from the Louisiana Department of Transportation and Development (LDOTD) and the Jefferson Parish Traffic Engineering Division concerning the impact of the facility on traffic flow and the adequacy of the roads are included in Attachment 3.

**521.A.1.c.**

**c. Existing Land Use-a description of the total existing land use within three miles of the facility by approximate percentage) including, but not limited to:**

**residential;  
healthcare facilities and schools;  
agricultural;  
industrial, and manufacturing;  
other commercial;  
recreational; and  
undeveloped.**

**Response:**

Land use in the immediate vicinity of the site is primarily for waste management purposes. The Kelvin Landfill is adjacent to the site on the east. The closed Marsh Landfill (Greater New Orleans Landfill) is adjacent to the site on the west. The closed BFI Area Ninety Landfill is located south of the site on U.S. Highway 90, across from the Kelvin Landfill which is located just east of the site. The nearest residential subdivision is Live Oak Manor subdivision located approximately 0.8 miles northeast of the site. The nearest school is Cherbonnier School, located approximately 0.7 mile northeast of the site. Land use within a 3-mile radius of the facility is shown in Figure 3. A map showing land use within 1 mile of the site perimeter is shown in Figure 5. Surrounding land use, by percentage, within 3 miles of the facility is listed in the following table. Supporting documentation is provided in Attachment 4.

LAND USE WITHIN THREE MILES OF THE PROPOSED RIVER BIRCH LANDFILL	
Land Use Classification	Percentage Land Use
Residential	7
Health-care facilities / schools	< 1
Agricultural	5
Industrial / Manufacturing	8
Other Commercial	3
Recreational	< 1
Undeveloped	75

**521.A.1.d.**

**d. Aerial Photograph**—a current aerial photograph, representative of the current land use, of a one mile radius surrounding the facility. The aerial photograph shall be of sufficient scale to depict all pertinent features. (The administrative authority may waive the requirement for an aerial photograph for Type III facilities.)

**Response:**

An aerial photograph of the site is included as Figure 6.



521.A.1.e.i.

**e. Environmental Characteristics--the following information on environmental characteristics:**

**i. a list of all known historic sites, recreation areas, archaeologic sites, designated wildlife-management areas, swamps and marshes, wetlands, habitats for endangered species, and other sensitive ecologic areas within 1,000 feet of the facility perimeter or as otherwise appropriate;**

Response:

The area within 1,000 feet of the site perimeter is shown in Figure 5. There are no known historic sites, recreation areas, archaeologic sites, designated wildlife areas, habitats for endangered species or other sensitive ecologic sites within 1,000 feet of the facility perimeter. A detailed wetlands determination of the 174 acre West Expansion has been provided in Attachment 6.

**521.A.1.e.ii.**

**ii. documentation from the appropriate state and federal agencies substantiating the historic sites, recreation areas, archaeologic sites, designated wildlife-management areas, wetlands, habitats for endangered species, and other sensitive ecologic areas within 1,000 feet of the facility; and**

**Response:**

Documentation of information required in LAC 33:VII.521.A.1.e.i. is provided in Attachment 5. The U.S. Army Corps of Engineers has determined in a letter dated June 18, 1999 that the original site is not a wetland and is not subject to U.S. Army Corps of Engineer's jurisdiction. This letter from the U.S. Army Corps of Engineers concerning wetlands is included in Attachment 6. An updated wetlands determination, dated November 20, 2006 has been included in Attachment 6. A detailed wetlands determination of the 174 acre West Expansion is being conducted and as soon as this study is completed and results available, this information will be proved to the administrative authority. Letters were received from the U.S. Fish and Wildlife Services, The La. Office of State Parks, The La. Dept. of Wildlife & Fisheries and the La. Office of Cultural Development Division of Archaeology indicating the West Expansion of River Birch Landfill has no historic sites, recreation areas, archaeological sites wildlife management areas, or habitats for endangered species within 1,000 feet of the site. These letters are included in Attachment 5.

521.A.1.e.iii.

iii. A description of the measures planned to protect the areas listed from the adverse impact of operation at the facility;

Response:

Adverse impact to the surrounding area from operations of the facility is prevented by engineered structures and careful operation of the facility. All solid waste handling facilities are lined to prevent the vertical migration of waste, or waste constituents, into subsurface soils or groundwater. Disposal cells are constructed with levees to prevent landfill runoff from leaving the landfill facilities. The site is contoured so that surface runoff can be collected, monitored, and treated, if necessary. Leachate and contact stormwater is presently sent to a treatment pond for treatment prior to discharge. The pond is designed to provide an average 90 day detention time for average rainfalls falling on more than 80 acres of active landfill area, and still have capacity to hold a 24 hour, 25 year storm of 12 inches with 2 feet of free board. This pond is designed with three (3) feet of recompacted clay having a maximum permeability of  $1 \times 10^{-7}$  cm/sec and is constructed with a pressure relief under-drain which will act as a leak detection system as well. As part of the West Expansion of River Birch, a larger leachate treatment pond will be constructed to provide capacity for more than 200 acres of active landfill area. All or a portion of the water in the leachate treatment pond may be placed in the River Birch on-site injection well. The original treatment pond will be converted to landfill area.

A closure plan for the existing treatment pond is included in 521.J.1.b. and Attachment E.

**521.A.1.f.**

**f. A wetlands demonstration, if applicable, as provided in LAC 33:VII.709.A.4.**

**Response:**

The original solid waste permit application submitted for River Birch Landfill contained a letter from the U.S. Army Corps of Engineers, dated August 18, 1994, indicating that a portion of the landfill area was determined to be wetlands and subject to U.S. Army Corps of Engineers jurisdiction.

Based on this original letter it was indicated that no work would be done in this area until either a wetland permit was obtained or the property declared non-wet.

On June 8, 1999 an additional field investigation was conducted by the Corps of Engineers. Based on this investigation a revised determination was issued June 18, 1999. This letter indicated that the site is not a wetlands and is not subject to U.S. Army Corps of Engineers jurisdiction.

A copy of these letters is contained in Exhibit 6.

A new detailed wetlands determination is being conducted on the 174 acres which makes up the West Expansion property. As soon as this investigation is complete the information will be provided to the administrative authority. As with the original site no work will be done in the West Expansion area until either the property is shown to be non-wet by the site determination or a wetland permit is obtained.

**521.A.1.g.**

**g. Demographic Information--the estimated population density within a three-mile radius of the facility boundary, based on the latest census figures.**

**Response:**

A three-mile radius of the original site is shown in Figure 3 and Figure 3.2 show the three (3) mile radius around the expanded site. The population within the original three mile radius area was approximately 39,535 persons. The resulting population density was approximately 1,400 persons per square mile. However most of these persons were concentrated in subdivisions across the Mississippi River and the eastern end of the area analyzed. Within a 1.5 mile radius there were approximately 5,252 persons. No residences were located within 0.8 miles of the original site. Supporting documentation is provided in Attachment 4.

A new population report was obtained for the existing site and west expansion showing the population within the expanded three (3) miles radius being approximately 27,624 people in Jefferson Parish and 4,277 people in St. Charles Parish with a population density of approximately 1,128 people per square mile. The new supporting documentation is based on the 2,000 U.S. Census and is also provided in Attachment 4.

**521.A.2.a.**

**2. The following information regarding wells, faults and utilities is required for Type I and II facilities:**

**a. Wells. Map showing the locations of all known or recorded shot holes and seismic lines, private water wells, oil and/or gas wells, operating or abandoned, within the facility and within 2,000 feet of the facility perimeter and the locations of all public water systems, industrial water wells, and irrigation wells within one mile of the facility. A plan shall be provided to prevent adverse effects on the environment from the wells and shot holes located on the facility.**

**Response:**

The location of recorded wells in this area is shown in Figure 5R1. There are no known shot holes, seismic lines, or private water wells within the facility or within 2,000 feet of the facility perimeter. As shown in Figure 5R1, there are only three oil or gas wells within 2,000 feet of the facility perimeter and no oil or gas wells within the facility. There are no known public water systems, industrial water systems, or irrigation wells within one mile of the facility. Supporting documentation is provided in Attachment 7. An additional search of the LA DOTD Public Works records was made for The West Expansion which revealed the monitoring wells for The Kelvin Landfill, River Birch Landfill, Greater New Orleans Landfill and The Jefferson Parish Sewer Lagoon. These wells have been added to Figure 5R1. The data used to plot these wells is included in Attachment 7.

Since there are no wells or shot holes located within the facility, it is not necessary to develop a plan to plug them.

**521.A.2.b.i.**

**b. Faults**

**i. Scaled map showing the locations of all (recorded faults within the facility and within one mile of the perimeter of the facility; and**

**Response:**

As demonstrated in Figure 7, there are no known faults within the facility or within one mile of the facility.

521.A.2.b.ii.

ii. Demonstration, if applicable, of alternative fault set-back distance as provided in LAC 33:VII.709.A.5.

Response:

Not applicable. There are no known faults within the facility.



**521.A.2.c.**

**c. Utilities. Scale map showing the location of all pipelines, power lines, and right-of-ways within the site.**

**Response:**

Existing pipelines, power lines, and right-of-ways within the site are shown in Figures 2 and 5R1. There is an existing pipeline along the north of River Birch and a water main located along south Kenner Avenue along the west side of River Birch Landfill.

**521.B.1.a.**

**B. Facility Characteristics.** Standards concerning facility characteristics are contained in LAC 33:VII.709.B (Type I and II facilities), LAC 33:MI.717.B (Type I-A and II-A facilities), and LAC 33:VII.719.B (Type III facilities). A facility plan, including drawings and a narrative, describing the information required below must be provided.

**The following information is required for all facilities:**

**a. Elements of the process or disposal system employed, including, as applicable, property lines, original contours (shown at not greater than five-foot intervals), buildings, units of the facility, drainage, ditches and roads;**

**Response:**

Elements of the process are described in the Operational Plan in Appendix A.

The property lines are shown on Figure 2 and 2.1. Additional facility characteristics including buildings, units of the facility, drainage ditches, and roads are shown on Figures 31, 35, 43 and 46. Site elevations are shown in Figure 8.1. Contour lines were not generated due to the lack of variation across the site.

**521.B.1.b.**

**b. The perimeter barrier and other control measures;**

**Response:**

The perimeter barrier for the site is a seven foot tall fence that surrounds the entire site. This fence prevents unauthorized ingress or egress except by willful entry. Access to the site is controlled through a single entrance gate that is either opened when the gate house is manned and the site operated, or locked when the site is closed. All gates will be locked during non-operating hours. The facility has signs listing the types of wastes that can be received by the facility, that is, residential, commercial, and industrial non-hazardous solid waste. No hazardous waste will be handled by the facility.

**521.B.1.c.**

**c. A buffer zone;**

**Response:**

As shown in Figure 8.1, the buffer zone for the site is 200 feet along the northern property line and 100 feet on the eastern and western sides of the site. Since the facility is triangular in shape, there is no southern boundary. LAC 33:VII.709.B.2.a requires a buffer zone of not less than 200 feet between the facilities and the property line, unless permission is obtained from the adjacent landowners and occupants for a reduced buffer zone in a notarized affidavit. A variance to the buffer zone requirement has been obtained as allowed under LAC 33:VII.709.B.2. Where the buffer zones have been reduced, the adjacent landowner is Jefferson Parish. Consequently, instead of a notarized affidavit, the Jefferson Parish Council passed a resolution authorizing the reduction of the 200-foot buffer. A certified copy of this resolution is included as Attachment 8. Updated correspondence concerning the buffer zone has also been provided in Attachment 8. River Birch will not store, process, or dispose of solid waste in the buffer zone. Waiver of the 200 foot buffer for The West Expansion was made as part of the acquisition of the property and is contained in the purchase agreements found herein in Section IV, Attachment 1. Portions of The Jefferson Parish Zoning ordinance for landfills, contained in Part I, Attachment 2, require buffer zones and perimeter barriers. These requirements will be complied with by River Birch.

**521.B.1.d.**

**d. Fire-protection measures;**

**Response:**

The facility is equipped with minimal fire-fighting capabilities. Buildings are equipped with ABC fire extinguishers and fire hoses. All major equipment used on-site will carries ABC type fire extinguishers. Additional fire-fighting capabilities are provided by local fire departments, if necessary. A letter from The Hebert Wallace Memorial Volunteer Fire Company located in Avondale, La., is included in Volume II, Attachment 10, page 1. Soil will be stockpiled on site and may be used to smother any fire which may start.

**521.B.1.e.**

**e. Landscaping and other beautification efforts;**

Response:

The site is not visible from any public access roads. However, landscaping or other beautification measures has been implemented to improve the aesthetics of the facility. The Jefferson Parish Zoning Ordinance found herein in Section III, Part I, Attachment 2 has landscape requirements. River Birch Landfill will comply with these requirements.

**521.B.1.f.**

**f. Devices or methods to determine, record, and monitor incoming waste;**

**Response:**

Each shipment is logged in at the gatehouse and weighed on a truck scale. The load, wet-weight, date of receipt, generator of the waste, whether it is industrial, commercial, or residential solid waste, and if the waste is from out of state is recorded in the site logbook. As loads are spread in the landfill they are visually checked by equipment operators to ensure that the waste is in accordance with the waste that the facility is allowed to handle. Waste which is not acceptable is removed. Load acceptance and inspection procedures are implemented to ensure that hazardous waste and other types of unauthorized wastes are not accepted by the facility. Procedures for monitoring, accepting, and inspecting incoming wastes are discussed in the Operation Plan in Appendix A.1.1.

The La. DEQ recommends that the waste inspection area be constructed in the cell as a temporary feature. The inspection areas consist of a soil pad constructed of a minimum of one foot of soil with a perimeter soil berm one to two feet in height. The inspection areas will be constructed in the active cell where landfill liner has been constructed. Any unacceptable waste shall be removed along with any contaminated soil by the company bringing the material to the site. As filling of the cell proceeds, the inspection area will be moved as necessary by constructing a new inspection area. Soil from the previous area will be used as cover material for the active part of the cell. Since this structure is not permanent, its location has not been shown on any site drawings.

Liquid wastes which may be acceptable for disposal as a solid but not acceptable as a liquid may be accepted and solidified before being disposed. Solidification occurs within the existing disposal cell over a previously lined area. Watertight tanks which can be moved by landfill equipment are used to solidify liquids. The liquids will be mixed with fly ash or similar type dry material until no free liquid is present. Once solidified, the waste will be removed from the tank and disposed of as any other waste. Once elevations around the mixing tank have reached a point when the tank area needs to be filled, the tank will be emptied and moved to a new location where the process will be repeated. Each time the tank is relocated, it will be checked for holes to assure that no liquid escapes.

Up to two non-hazardous waste disposal wells may be operated by River Birch, Inc. within the limits of River Birch Landfill in the future. The proposed locations of the wells are shown on Figure 31. The wells will be properly permitted and operated in accordance with the Louisiana Department of Natural Resources Office of Conservation Injection and Mining Division.

521.B.1.g.

g. NPDES discharge points (existing and proposed); and

Response:

There are currently five LPDES discharge points for the site. Outfall 001 is for the treatment pond. Outfall 002 is for treated sanitary sewage from a package sanitary sewage treatment unit. Outfall 003 is for stormwater runoff from the eastern side of the landfill. Outfall 004 is from the exterior perimeter ditches located on the west and northern side of the landfill. Outfall 005 is from the operations area located near the northeast corner of the landfill. Outfall locations are shown on Figure 42. Discharge from the West Expansion property is routed along the west property line along South Kenner Avenue and then along the north property line along the railroad to outfall 004. The New Treatment Pond located at the south end of the site, will discharge into the exterior perimeter ditch located along South Kenner Avenue at discharge point 006. Water from this discharge will then flow along Kenner Avenue and the offsite at discharge point 004. Discharge points 001 and 005 will be closed when the original treatment pond and adjacent operations area are converted into landfill. All water which comes into contact with waste will be routed to the new treatment pond when the existing treatment pond is converted to landfill.

River Birch received its original LPDES Permit on April 1, 1999. A copy of the current LPDES Permit can be found in Volume I, Section II.



**521.B.1.h.**

**h. Other features, as appropriate.**

**Response:**

Site features and operations are discussed in the Operational Plan in Appendix A. Included are: elements of the facility process, description of the perimeter barrier and control measures, fire protection measures, methods of determining, recording, and monitoring incoming waste, and recordkeeping procedures.

**521.B.2.a.**

**2. The following information is required for Type I and II facilities:**

**a. Areas for isolating nonputrescible waste or incinerator ash, and borrow areas; and**

**Response:**

Not applicable. No areas have been designated for isolating nonputrescible waste or incinerator ash. Nonputrescible waste and incinerator ash is landfilled just as all other wastes. Other than the areas to be excavated for cell construction, there are no designated borrow areas at the site.

**521.B.2.b.**

**b. Location of leachate collection/treatment/removal system.**

Response:

All landfill cells will be equipped with a leachate collection and removal system. The leachate collection system is installed immediately above the liner system. A description of the leachate collection/removal system is discussed in response to LAC 33:VII.521.F.2.b. and 4.c. Leachate and contact stormwater is treated in a 12 acre treatment pond located in the northeast corner of the landfill site. As the disposal operation moves into the West Expansion a larger treatment pond approximately 28 acres in size will be constructed on the south end of the site. Stormwater and leachate from the West Expansion will then be directed to this larger pond. Stormwater and leachate flowing into the original pond will continue to flow into this facility until cells 32-43 are full. Prior to cell 43 being completely filled the existing pond will be drained and all water removed. All water flowing to the pond will be directed to the new leachate treatment pond and the three (3) culverts draining into the pond will be removed. The opening in the levee created by removal of the pipes between cell 14 and the existing pond will be backfilled with clay and plugged to assure no water leaks from the disposal cell into the pond area. Once the connection between the pond and disposal cell is closed, the pond will be dewatered and all sludge removed from the bottom of the pond. Once cleaned, the concrete pad and soil cushion will be removed to expose the 60 mil HDPE liner. The liner will then be removed up to elevation 5.5 which is two (2) feet below the top of the levee and the highest elevation of water in the pond. The re-compacted clay liner will be carefully inspected for any signs of excessive moisture. If any excessively wet areas are found, these areas will be tested to verify that no contaminants are present in the soil. Tests of the liner clay material will be compared to tests of uncontaminated local soil to verify that no contaminants are present. The results of these test will be supplied to the administrative authority for approval before final liner is installed. Once the in-place liner is approved to remain, any area excavated will be returned to its original grade following the approved procedures for construction of re-compacted clay liner. Once original grade is restored, 24 inches of additional re-compacted clay will be installed to allow the leachate collection trench to be formed without removing the 36 inches of re-compacted clay already in place. The finish liner section will be as detailed on Figure 52 (the re-compacted clay liner will be 5.0 feet thick across the normal section and 4.0 feet thick at the leachate collection trench.) Once construction of the re-compacted clay liner is complete, the 60 mil HDPE liner and leachate collection net and cover will be installed as approved for the normal disposal cell construction. Liner in the old operation area will be constructed identical to the normal landfill liner system.

At some point in the future, River Birch, Inc. intends to operate up to two Class I non-hazardous waste disposal wells. The wells will be located on the southerly end of the landfill site, as shown on the Overall Site Plan provided as Figure 31. River Birch, Inc. intends to accept non-hazardous waste streams from industry, municipalities, oil and gas companies and other generators of non-hazardous waste that are compatible with waste streams generated by River Birch, Inc. It is anticipated that all or a portion of the leachate in the proposed 28 acre leachate collection pond will be disposed of in the wells. However, it is anticipated that the 28 acre leachate collection pond will remain in use as a holding pond upon activation of the disposal wells.

The disposal wells and associated facilities will be properly permitted through the Louisiana Department of Natural Resources Office of Conservation Injection and Mining Division. Any applicable modifications to the water discharge permit for River Birch Landfill will be made prior to implementation of changes to discharge conditions at the site.

**521.C.1.a.**

**C. Facility Surface Hydrology.** Standards governing facility surface hydrology are contained in LAC 33:VII.711.A (Type I and n landfills), LAC VII.713.A (Type I and II surface impoundments), LAC 33:VII.715.A (Type I and II landfarms), LAC 33:VII.717.C. (Type I-A and II-A facilities), and LAC 33:VII.719.C (Type III facilities).

**1. The following information regarding surface hydrology is required for all facilities:**

**a. A description of the method to be used to prevent surface drainage through the operating areas of the facility;**

**Response:**

The site is contoured to control the flow of surface water across the site. Non-contact water (water that does not contact waste or waste cover) is directed away from the waste disposal area, discharged and monitored through a LPDES outfall.

The landfill site including the landfill disposal areas, operations area, and treatment pond are surrounded by levees initially constructed to elevation  $\pm 5.5$  feet. These levees are constructed and maintained around each advancing excavation of the landfill to prevent off-site water from entering the landfill area.

As the liner systems are constructed within the disposal cells a 2 foot thick cap will be constructed over the levee to bring the levee elevation to  $\pm 7.5$  feet. The levees are be used to contain and direct contact water to the treatment areas or lined areas of the landfill where it is collected and pumped to the treatment pond. A temporary drainage ditch is formed by the perimeter levee and waste as shown on Figure 39 along cells 1 - 31. This temporary ditch is used to direct water to the treatment pond. The temporary ditch is sloped from the southern end of the landfill toward the leachate treatment pond to facilitate drainage and prevent ponding of water within the landfill area. Elevation 5.5 provides a 2 foot free board above the 100 year flood elevation. The final elevation of  $\pm 7.5'$  for the landfill levees provides a greater free board for stormwater draining toward the treatment pond.

As the operation moves into The West Expansion a dedicated interior perimeter ditch will be constructed along the exterior of cells 32 through 51. This ditch will be lined with 3 feet of recompacted clay and a 60 mil HDPE liner the same as the leachate treatment pond. The elevation of the levees along these ditches will be 7.5 feet  $\pm$  to prevent off site water from draining into the operating area.

**521.C.1.b.**

**b. A description of the facility runoff/run-on collection system;**

Response:

Runoff/Run-on is controlled by a perimeter levee around the landfill, operations area, and treatment pond; and an exterior perimeter ditch system outside of the perimeter levee. Run-off from the cell is prevented by the perimeter levee and the temporary interior perimeter ditch which channels water to the treatment pond. The perimeter levee and temporary ditch are shown in Figure 39. The temporary ditch along cells 1 – 31 is lined with a temporary HDPE liner or with 12 inches of on-site clay to prevent moisture from soaking into the waste. This temporary liner is removed when this area is filled. The filling sequence within each cell will proceed such that waste is always sloped toward the middle of the cell. Leachate and stormwater within the cell is removed either by the leachate collection system or portable pumps used to remove leachate and stormwater from the surface of cell. To ensure that runoff does not escape from the cell from the outer face of the cell, a temporary interior perimeter drainage ditch will be maintained between the outer slope and the perimeter berm along cells 1 – 31 as shown on Figure 39. This drainage ditch varies in size as it flows toward the treatment pond. The ditch is designed to handle the 25 year storm and maintain a 24" free board. Water in the ditch will either drain to an area inside the cell or slope to the treatment pond. For cells 32 – 51 a permanent interior ditch will be constructed identical to the treatment pond with 3 feet of a clay and a 60 mil HDPE liner. This will direct stormwater to the leachate treatment pond for testing prior to discharge. To protect the HDPE liner a 2 foot thick protective layer of soil will be placed over the liner to protect the liner from damage during ditch maintenance.

The run-on control system consists of the perimeter levee and a ditch system located outside of the perimeter berm. The perimeter levee prevents run-on from entering the cell. The ditch system conveys non-contact surface water (water that has not come into contact with waste) around the active portion of the site. This ditch system is shown in plan view in Figure 35 and in cross section in Figure 35 and in cross section in Figure 41. Surface water that drains to the ditch system is discharged through a permitted stormwater outfall.

The original treatment pond is designed to maintain a 2 foot free board while storing 3 months of average rainfall based on 60-inch annual rainfall with enough additional capacity to handle a 12 inch/24 hour rainfall event from 80 acres of active landfill. This volume provides enough capacity to allow large areas of the landfill to be under construction without final cover in place. As areas of the landfill reach final grade, they will be capped and grass established before runoff is directed off-site. The 80 acre capacity allows ample time for the final cap to be properly in place before runoff is directed away from the treatment pond. When the disposal operations move into The West Expansion, a new larger treatment pond capable of handling run-off from approximately 200 acres of landfill will be constructed at the south end of the site.

**521.C.1.c.**

**c. The maximum rainfall from a 24-hour/25-year storm event;**

**Response:**

According to the U.S. Department of Commerce Rainfall Frequency Atlas of the United States, Technical Paper 40 the maximum rainfall from a 24-hour/25-year storm event for the New Orleans area is approximately 10.4 inches of rain. Climatological data for the New Orleans area for the period 1983 to 1992 is provided in Attachment 11. Wind roses for the New Orleans area are provided in Attachment 11. Since the maximum rainfall is less than 12 inches, a 12" rainfall has been used for sizing the temporary drainage ditch and treatment ponds.

**521.C.1.d.**

**d. the location of aquifer recharge areas in the site or within 1,000 feet of the site perimeter, along with a description of the measures planned to protect those areas from the adverse impact of operations at the facility; and**

**Response:**

The New Orleans Quadrangle of the Aquifer Recharge Atlas shows that the site is not located in an aquifer recharge area. A portion of the New Orleans Quadrangle showing the location of the site with respect to recharge areas is presented in Attachment 11.

**521.C.1.e.**

**e. If the facility is located in a flood plain, a plan to ensure that the facility does not restrict the flow of the 100-year base flood or significantly reduce the temporary water-storage capacity of the flood plain, and documentation indicating that the design of the facility is such that the flooding does not affect the integrity of the facility or result in the washout of solid waste.**

**Response:**

As shown in Figure 4, the site is located in the 100-year flood zone with a flood elevation of 3.5 feet NGVD. The site has been developed to control drainage around the site and prevent run-on from entering the operating areas of the site. Waste handled at the site will be in landfill cells constructed with berms that extend to a minimum elevation of 5.5 feet or two feet above the 100-year base flood level. As the liner systems are constructed in the disposal cells, an additional 2-foot thick clay cap will be placed on the levees, bringing the elevation to 7.5 feet. The Sauls Canal and perimeter ditches are designed to route the 100-year flood around the site and prevent damage to the site and surrounding property. The levee is planted with grass and the grass maintained to provide protection against erosion which could damage the levee during heavy rainfall events.



**521.D.1.a.**

**D. Facility Geology.** Standards governing facility geology are contained in LAC 33:VII.709.C (Type I and II facilities), LAC 33:VII.717.D (Type I-A and II-A facilities), and LAC 33:V11.719.D (Type III facilities).

**1. The following information regarding geology is required for Type I and Type II facilities:**

**a. Isometric: profile and cross-sections of soils, by type, thickness, and permeability;**

**Response:**

Isometric maps and cross-sections of all soils encountered within the original landfill site were presented in the original permitting package prepared by Woodward Clyde and Associates (Figures 11 through 28).

An isometric map of the area of the proposed west landfill expansion is provided as Figure 11 of the geotechnical report submitted by Eustis Engineering Company, Inc. to River Birch, Inc. on 6 January 2003 Volume III Section V, Part XI. Cross-sections of the area of the proposed west landfill expansion are further provided in Figures 2 through 10 of the geotechnical report of 6 January 2003. In addition, cross-sections of the existing monitoring wells is provided in Volume III, Section V, Part XI. These cross-sections were further detailed in Enclosures 2 through 10 of a letter submitted by Eustis Engineering Company, Inc. to River Birch, Inc. on 10 January 2003, Section V, Part VI. Generalized descriptors of the various lithologic units are provided on each cross-section and on the isometric profile. The lithologic units are described in detail in the section of the geotechnical report entitled "Site Geology." In addition, physical properties (including permeability) measured from laboratory testing of the subsoil's beneath the landfill are summarized on Figure 13 of the geotechnical report of 6 January, 2003.

**521.D.1.b.**

**b. Logs of all known soil borings taken on the facility and a description of the methods used to seal abandoned soil borings;**

**Response:**

A response for LAC 33:VII.521D.1.a. concerning site geology is provided immediately following the citation for LAC 33:VII.521.D.1.c. The response to this section (LAC 33:VII.521.D.1.a) is incorporated in that response.

A list of logs with soil borings and CPT soundings is found within the permit application submitted by Woodward-Clyde Consultants in Volume III, "Appendix B Subsurface Characterization", and in Volume IV "Appendix I Cone Penetrometer Logs". Additional logs of soil borings and CPT soundings completed for the proposed west landfill expansion are presented in Appendices I and II of the geotechnical report submitted by Eustis Engineering Company, Inc. on 6 January 2003 Volume III, Section V, Part X. In addition to the geotechnical report submitted by Eustis Engineering Company, a table has been included in Volume III, Section V, part X which explains the relationship of Zones A & B to units 1-4. Several requests for use of Cone Penetrometer have been made during various stages of construction of River Birch Landfill. These request are found in Volume II, Attachment 14.

Borings drilled by Eustis Engineering were completed by wet rotary drilling techniques. Once the borings were sampled to the terminal depth of exploration, 20:15:1 parts cement:bentonite:water were mixed with water in a collection pit. The resulting mixture was pumped down the central drilling stem to the bottom of the bore hole as the drill stem was withdrawn.

After CPT testing, the CPT rods and cone were fully withdrawn from the test hole. A disposable cap was then placed on the end of the hollow CPT rods, and the cap was advanced down the test hole to the final depth of the CPT sounding. As with wet rotary bore holes, a mixture of 20:15:1 parts cement:water:bentonite was created. This mixture was placed inside the hollow rods via funnel, and the cone was slowly withdrawn. The disposable point remained in place at the bottom of the test hole, and the grout mixture flowed by gravity to the bottom of the hole, with the stem of cone rods acting as a tremie.

**521.D.1.c.**

**c. Results of tests for classifying soils (moisture contents, Atterberg limits, gradation, etc.), measuring soil strength, and determining the coefficients of permeability, and other applicable geotechnical tests;**

**Response:**

Results of index laboratory tests and undrained strength measurements completed for the proposed west landfill expansion are tabulated on the boring logs provided in Appendix I of the geotechnical report submitted by Eustis Engineering Company, Inc. to River Birch, Inc. on 6 January 2003 Section V, Part II. Additional test data for permeability are included in Appendix III of the same report. Classification data from CPT soundings is provided in Appendix II of the geotechnical report of 6 January 2003. These classifications were derived using site-specific calibration of CPT soundings with boring data and commonly accepted standards for soil classification via CPT parameters.

**521.D.1.d.**

**d. Geologic cross-section from available published information depicting the stratigraphy to a depth of at least 200 feet below the ground surface;**

**Response:**

Geologic cross-sections in the vicinity of the site to a depth of at least 200 feet below ground surface are shown in Figure 19. A second geologic section in the vicinity of the site is also provided (with reference) as Figure 12 of the geotechnical report submitted by Eustis Engineering Company, Inc. on 6 January 2003 Section V, Part II.

**521.D.1.e.-g.**

**e. For faults mapped as existing through the facility, verification of their presence by geophysical mapping or stratigraphic correlation of boring logs. If the plane of the fault is verified within the facility's boundaries, a discussion of measures that will be taken to mitigate adverse effects on the facility and the environment;**

**f. For a facility located in a seismic impact zone, a report with calculations demonstrating that the facility will be designed and operated so that it can withstand the stresses caused by the maximum ground motion, as provided in LAC 33:VII.709.C.2; and**

**g. For a facility located in an unstable area, demonstration of facility design as provided in LAC 33:VII.709.C3.**

**Response:**

Not applicable. There are no known faults in, through, or within 1,000 feet of the site as demonstrated in Figure 7. The site is not located in a seismic impact zone. The site is not located in an unstable area.

Subsequent investigation by Eustis Engineering Company, Inc. provide a corroborating assessment that the areas of the landfill and the proposed west expansion are not located within seismic impact zones, as defined by the U.S.E.P.A. and the La.D.E.Q. Seismicity of the site is discussed in paragraphs 22 through 25 of the report submitted by Eustis Engineering Company, Inc. on 6 January 2003 Section V, Part II.

**521.D.2.**

**2. The following information regarding geology is required by Type III woodwaste, and construction/demolition-debris facilities:**

Response:

Same as the response to LAC 33:VII.521.D.1. Although this facility may receive woodwaste and/or construction/demolition debris, they are not isolated from the rest of the waste streams. Loads containing only these materials are diverted to the Highway 90 C/D Landfill.

**521.E.1.a.i.**

**E. Facility Subsurface Hydrology.** Standards governing facility subsurface hydrology are contained in LAC 33:VII.715.A (Type I and II landfarms).

**1. The following information on subsurface hydrology is required for all Type I facilities and Type II landfills and surface impoundments:**

**a. Delineation of the following information for the water table and all permeable zones from the ground surface to a depth of at least 30 feet below the base of excavation:**

**i. Areal extent beneath the facility;**

**Response:**

The site is generally comprised of Holocene Age sediments overlying Pleistocene Age sediments. The uppermost 10 to 24 feet of Holocene Deposits are backswamp deposits. These soils typically consist of extremely soft to soft gray and brown clay and organic clays having a high content of decayed wood and organic matter. As indicated on the boring logs transmitted with the geotechnical report, decayed wood filled the sample tube in some instances during the continuous sampling operations within the backswamp deposits. Backswamp deposits have been designated as lithologic Unit I in the geotechnical report of 6 January 2003 and this designation was preserved in the letter of 13 January 2003 (see Enclosures 2 through 11). Both the geotechnical report and letter referenced herein may be found in, Section V.

The backswamp deposits are underlain by a sequence of intertributary deposits which accreted in a variety of fluvial depositional environments associated with stream meandering, overbank flooding, and other processes. The variety of depositional environments which may have been present at any single plan location dictates that significant variability exists with depth within the intertributary deposits. In general, these soils can be characterized as very soft to soft gray clays with interbedded lenses of soft gray silty clay and loose gray silt or clayey silt. The intertributary deposits were interpreted to extend to depths of 50 to 60 feet below the existing ground surface. These soils were identified as lithologic Unit II in figures presented in the geotechnical report and this designation was preserved in the subsequent letter.

At depths varying between 50 and 60 feet below the existing ground surface, prodelta clays and silty clays were encountered. These soils consist of relatively homogeneous deposits of soft to medium stiff gray clay and silty clay containing shells or shell fragments. The Holocene prodelta deposits were identified as lithologic Unit III in the geotechnical report and the subsequent letter.

The Holocene prodelta deposits were generally found to extend to depths of 65 to 70 feet below the existing ground surface. The base of the Holocene prodelta marks the interface between soils of Holocene Age and those of the Pleistocene Epoch. Localized depressions as much as 15 feet below the general level of the Pleistocene contact were observed at the site (see Boring Nos. EE-C-39-02, EE-B-40-02, EE-C-27-02, and EE-B-28-02).

In the geotechnical report of 6 January 2003, all Pleistocene deposits were identified as Unit IV-A. While that simplification is adequate for describing site geology as it would affect geotechnical stability of the landfill, it was not judged adequate for characterizing ground water flow at the site. Pleistocene deposits were subsequently divided into four distinct units.

The uppermost 3 to 4 feet of the Pleistocene deposits typically consisted of stiff gray and brown clay containing a high content of wood and organic matter, and gas was frequently encountered in varying volumes within these deposits. These deposits were interpreted to be relic backswamp deposits. At some boring locations, stiff gray and tan clay approximately 5 to 10-ft thick were encountered in addition to or in lieu of the Pleistocene backswamp deposits. The aggregation of Pleistocene backswamp deposits and stiff gray and tan clay were defined as Lithologic Unit IV-A.

The veneer of stiff clay that forms Unit IV-A was generally underlain by 5 to 20 feet of interbedded clayey silt, sandy silt, and silty sand that are designated as Unit IV-B. It should be noted that the surface of these soils was present as the uppermost Pleistocene surface at several boring locations (see Boring/CPT Nos. EE-C-1-02, EE-C-4-02, EE-B-5-02, EE-C-9-02, EE-C-19-02, EE-C-25-02, EE-B-26-02, EE-C-27-02, and EE-C-39-02). The soils in Unit IV-B were typically encountered between 65 and 80 feet below the existing ground surface. However, several of the borings and CPT terminating at a depth of 70 feet below the existing ground surface never contacted Unit IV-B (see, for example, EE-B-10-02, EE-C-11-02, EE-C-33-02, or EE-B-44-02).

The interbedded silts and sands of Unit IV-B were underlain by relatively homogeneous deposits of stiff gray or gray and brown clay and silty clay. These stiff clay strata were designated as Unit IV-C, and these soils were found to extend 125 to 130 feet below the existing ground surface.

At these depths, massive deposits of dense to very dense gray fine sand and silty sand were encountered in Borings EE-B-6-02 and EE-B-12-02. These soils have been identified as the "200-ft" sand strata in previous characterizations of the site. In the letter of 13 January 2003, these sand strata are referenced as Unit IV-D. Figure 12 of the geotechnical report of 6 January 2003 indicates that these sand strata are typically encountered 200 to 220 feet below the ground surface near the currently active channel of the Mississippi River. However, the figure further indicates the sand strata were encountered at the Pleistocene interface at a depth of approximately 60 feet below the ground surface at a distance of 7,000 feet from the Mississippi River along Transection Line A-A. This indicates a rise in the surface of the sand strata that is consistent with the sand being encountered at a depth of approximately 130 feet below the ground surface at the River Birch site.

From this generalized lithology, the nature of ground water flow at the site may be characterized. Because the water table is typically encountered at shallow depths in the vicinity of the site, Unit I may be considered the first occurrence of ground water at the site. Laboratory tests on samples of these soils yielded hydraulic conductivities of  $1 \times 10^{-6}$  cm/s or less. While in situ permeabilities within these soils may be increased by the presence of roots or lenses of more permeable soils, the deposits generally exhibit poor water transmission characteristics. The unit is hydrologically significant as the first zone in which downward flowing seepage would contact ground water. For this reason, this zone was monitored as the first water bearing stratum.

Units II through IV-A generally consist of massive deposits of relatively impervious subsoils. Laboratory measured hydraulic conductivities in these units were typically  $1 \times 10^{-7}$  cm/s or less. Because of these low permeabilities, substantial equilibrium times would be required to establish new pore water pressures within Units II through IV-A in response to pore water pressure changes in Units I or IV-B. That is, these units (Units II through IV-A) may be effectively considered a single aquitard that is hydrologically independent of the overlying and underlying units (Units I and IV-B, respectively).



While Unit IV-B is not encountered within all borings and CPT locations at the site, its presence is consistent enough that it may be considered continuous. This unit is the first zone in which soils having relatively high hydraulic conductivities exist in substantial thickness. While the volume of water which may be transmitted through this unit is greatly limited by the thickness of the unit (generally 5 to 10 feet) and its low permeability, Unit IV-B may be considered as a permeable zone relative to overlying and underlying lithologic units. Laboratory measured hydraulic conductivities within these soils were measured at  $4 \times 10^{-7}$  cm/s.

The homogeneous clay strata forming Unit IV-C should be considered an aquitard having significantly lower hydraulic conductivity than the overlying and underlying units. A single laboratory test in these soils indicated a hydraulic conductivity of  $1 \times 10^{-8}$  cm/s.

Finally, the massive sand strata of Unit IV-D should be considered an aquifer. No laboratory tests were performed in these soils, though we estimate the hydraulic conductivity of these strata will vary between  $1 \times 10^{-4}$  and  $1 \times 10^{-2}$  cm/s. This sand is the first aquifer specifically identified in local maps of ground water resources. The extent of the "200-ft Sand" (Unit IV-D) within the project area has been provided in a previous permit application for the River Birch Landfill.

A Table explaining the relationship of the subsurface stratigraphic units has been provided in Volume III, Section V, Part X.

521.E.1.a.ii.

ii. Thickness and depth of the permeable zones and fluctuations;

Response:

Unit I, the Holocene backswamp deposits, are present within the uppermost 10 to 24 feet below the existing ground surface (see Enclosures 2 through 11 of the letter dated 10 January 2003). These soils typically consist of extremely soft to soft gray and brown clay and organic clays having a high content of decayed wood and organic matter. As indicated on the boring logs transmitted with the geotechnical report, decayed wood filled the sample tube in some instances during the continuous sampling operations within the backswamp deposits.

Because the water table is typically encountered between 2 and 5 feet below the ground surface in the vicinity of the site, Unit I may be considered the first occurrence of ground water at the site. Based on the first water encountered the saturated depth of Unit I varies between -4.0 feet to -7.0 feet NGVD. Laboratory tests on samples of these soils yielded hydraulic conductivities of  $1 \times 10^{-6}$  cm/s or less. While in situ permeabilities within these soils may be increased by the presence of roots or lenses of more permeable soils, the deposits generally exhibit poor water transmission characteristics. The unit is hydrologically significant as the first zone in which downward flowing seepage would contact ground water. For this reason, this zone was monitored as the first water bearing stratum.

The veneer of stiff clay that forms Unit IV-A of the Pleistocene deposits was generally underlain by 5 to 20 feet of interbedded clayey silt, sandy silt, and silty sand that are designated as Unit IV-B. It should be noted that the surface of these soils was present as the uppermost Pleistocene surface at several boring locations (see Boring/CPT Nos. EE-C-1-02, EE-C-4-02, EE-B-5-02, EE-C-9-02, EE-C-19-02, EE-C-25-02, EE-B-26-02, EE-C-27-02, and EE-C-39-02). The soils in Unit IV-B were typically encountered between 65 and 80 feet below the existing ground surface. However, several of the borings and CPT terminating at a depth of 70 feet below the existing ground surface never contacted Unit IV-B (see, for example, EE-B-10-02, EE-C-11-02, EE-C-33-02, or EE-B-44-02).

While Unit IV-B is not encountered within all borings and CPT locations at the site, its presence is consistent enough that it may be considered continuous. This unit is the first zone in which soils having relatively high hydraulic conductivities exist in substantial thickness. While the volume of water which may be transmitted through this unit is greatly limited by the thickness of the unit (generally 5 to 10 feet) and its low permeability, Unit IV-B may be considered as a permeable zone relative to overlying and underlying lithologic units. Laboratory measured hydraulic conductivities within these soils were measured at  $4 \times 10^{-7}$  cm/s.

521.E.1.a.iii.

iii. Direction(s) and rate(s) of groundwater flow based on information obtained from piezometers and shown on potentiometric maps; and

Response:

To establish groundwater flow direction, gradient, and velocity, seven piezometers were installed at the site in 1994. Piezometers were installed in clusters in the vicinity of boring locations B4, B-24, and B-31. Two piezometers were installed in each cluster near boring locations B-24 and B-31. At each of these locations one piezometer was screened in the upper portion of Zone A and the other piezometer was screened in the lower portion of Zone A. In the cluster near B4, one piezometer was screened in the upper portion of Zone A, one piezometer in the lower portion of Zone A, and one piezometer in Zone B. Piezometer information is shown on Figure 21. Locations of cross sections showing the screened interval of the piezometers are shown on Figure 21. The screened interval of the piezometers is projected onto geologic cross sections shown in Figure 22.

Potentiometric surface maps were developed from groundwater elevations determined at each piezometer. Using this data, groundwater flow direction and rate have been determined and are shown on potentiometric surface maps, Figures 23 through 26. The potentiometric maps indicate that groundwater flow is toward the east.

Groundwater levels from upper and lower Zone A (uppermost aquifer) piezometers are essentially the same, which is consistent with the interpretation of the horizontal and vertical extent of each Zone A.

In addition to the horizontal component of groundwater flow obtained from the potentiometric maps, a vertical flow net, Figure 28, was developed showing the vertical component of groundwater flow. The flow net indicates there is a strong upward component to groundwater flow as indicated by groundwater level from the piezometer screened in Zone B (see Figure 27).

Thirteen soil samples were tested and their hydraulic conductivities (K) determined. Results of the K tests are included in the boring logs from borings B-4, B-6, B-9, B-20, B-24, B-26, B-32, B-34, B-37, B-39, B-42, and B-43. Boring logs are included in Appendix B of the permit renewal application.

Hydraulic conductivity results ranged from  $10^{-4}$  cm/sec to  $10^{-8}$  cm/sec. The most conservative value ( $1.6 \times 10^{-4}$  cm/sec or 165.543 ft/yr) was used for calculating the groundwater flow rate. A horizontal gradient of 3 feet/1,220 feet was derived from the potentiometric surface map shown on Figure 26. The aquifer porosity was estimated to be 30 percent. Given these values the groundwater velocity is approximately 1.4 ft/yr.

Additional ground water studies were completed for the proposed West Landfill Expansion. These studies were summarized in a letter submitted by Eustis Engineering Company, Inc. to River Birch, Inc. on 10 January 2003 Section V, Part VI.

Because the water table is typically encountered at shallow depths in the vicinity of the site, Unit I may be considered the first occurrence of ground water at the site. Laboratory tests on samples of these soils yielded hydraulic conductivities of  $1 \times 10^{-6}$  cm/s or less. While in situ permeabilities within these soils may be increased by the presence of roots or lenses of more permeable soils, the deposits generally exhibit poor water transmission characteristics. The unit is hydrologically

significant as the first zone in which downward flowing seepage would contact ground water. For this reason, this zone will be monitored as the first water bearing stratum.

Three temporary standpipe piezometers (EE-P-1-02, EE-P-3-02, and EE-P-5-02) were installed between 25 November 2002 and 3 December 2002 at the locations shown on Enclosure 1 of the letter of 10 January 2003 to monitor ground water flow in Unit I. The ground water levels within these piezometers were recorded on 4 December 2002, 9 December 2002, 17 December 2002, and 3 January 2003. Contours of ground water elevations for each of these dates are shown on Enclosure 11. These contours indicate that ground water flow in Unit I within the area of the proposed west landfill expansion is generally from the northeast to the southeast. It should be noted that this trend is anomalous with respect to the anticipated flow directions. Based on prior groundwater flow studies for the existing landfill (see Figures 23-26 referenced above) and subsequent observations in monitoring wells at the site. The general groundwater flow is in a southeasterly direction. Given the relatively small groundwater gradients observed at the site, the anomalous observations may be associated with seasonal fluctuations and groundwater flow directions. On 25 October 2006 EE-P-1-02 and EE-P-3-02 were replaced with EAI-P-1-06 and EAI-P-3-06, respectively by Engineering Associates due to the fact that they were screened in Unit II rather than Unit I. Boring Logs for EAI-P-1-06 and EAI-P-3-06 are included in Volume III, Section V, Part XIV. Top-of-casing elevations for both piezometers will be recorded and water levels will be taken over the next several months.

A combined groundwater elevation contour map showing both the West Expansion Area and the existing River Birch Landfill has not been prepared due to the fact that groundwater measurements for these two (2) areas were collected on different dates. However, a comparison of groundwater elevations from the different dates indicates that groundwater flow within the West Expansion Area is towards the existing River Birch Landfill. Regardless, groundwater flow direction within Unit I of the West Expansion Area can be expected to flow towards active areas of the landfill once construction has commenced and once recovery of pore water has begun.

The average gradient of hydraulic head within Unit I was estimated from Enclosure 11 as 1 foot per 2,800 feet. Assuming a hydraulic conductivity of  $1 \times 10^{-6}$  cm/s, we estimate the specific discharge (or "Darcy velocity") of ground water in Unit I is  $4 \times 10^{-4}$  ft/yr. Assuming these soils have an average porosity of 70%, we estimate the average linear velocity (or "macroscopic velocity") of ground water in Unit I is  $5 \times 10^{-4}$  ft/yr. Secondary permeability introduced by root systems was not considered.

Units II through IV-A generally consist of massive deposits of relatively impervious subsoils. Laboratory measured hydraulic conductivities in these units were typically  $1 \times 10^{-7}$  cm/s or less. Because of these low permeabilities, substantial equilibrium times would be required to establish new pore water pressures within Units II through IV-A in response to pore water pressure changes in Units I or IV-B. That is, these units (Units II through IV-A) may be effectively considered a single aquitard that is hydrologically independent of the overlying and underlying units (Units I and IV-B, respectively).

Three standpipe piezometers (EE-P-2-02, EE-P-4-02, and EE-P-6-02) were installed within Unit II to a depth of 40 feet at the locations shown on Enclosure 1 of the letter of 10 January 2003. Observations of groundwater levels for all piezometers in Unit II are shown on Enclosure 12 of the letter dated 10 January 2003. These observations indicate that groundwater within Unit II generally flows west to east. It should be noted that small upward groundwater gradients appear to exist between Units I and II at the locations of piezometers EE-P-1-02, EE-P-2-02, EE-P-3-02, and EE-P-4-02. This upward gradient was not present at the location of piezometers EE-P-5-02 and EE-P-6-02. Upward groundwater gradients were observed between piezometers seated in Units I, II, and IV-B in groundwater flow studies completed for permitting of the existing landfill.

**521.E.1.a.iv.**

**iv. Any change in groundwater flow direction anticipated to result from any facility activities.**

Response:

Potentiometric data was available from both the River Birch site and the adjacent Greater New Orleans Landfill (at the southeast boundary of the River Birch site). This information considered together indicates that Sauls Canal is a local groundwater sink for the monitored stratum, Zone "A."

Site development includes relocating Sauls Canal. The movement is minor for the northernmost half of the northeast side of the facility. However, from that point the Sauls Canal was filled and a new canal constructed along the northeast side to the northeast corner of the facility, and thence along the southeast side until it intersects the old canal location. The net effects are:

- (1) A new canal on the southern half of the northeast side.
- (2) Displacement of the canal some 0 to 2500 feet to the southeast along the southeast side.

Moving the canal moved the location of the groundwater sink. Flow therefore remain towards the southeast in the area northwest of the current Sauls Canal. However, in the area southeast of the original Sauls Canal but northwest of the new location, flow in Zone "A" reverses from its previous northwesterly direction to a southeast direction (i.e., towards the new location of Sauls Canal).

The landfill is constructed with a pressure relief system in order to keep water out of the excavation. This system has only a localized impact on groundwater flow direction in the A Zone. The facility is not expected to have an impact on the deeper B Zone. The pressure relief system is only be operated during liner installation and filling to ground surface.

Based on the very slight gradient and low yield, it is not anticipated that there will be long-term effect on groundwater flow direction. However, the landfill is constructed with a pressure relief system in order to keep water out of the excavation. It is anticipated that this system will have only a localized impact on groundwater flow direction in the A Zone. The facility is not expected to have an impact on the deeper B Zone. The pressure relief system will only be operated during liner installation and filing to ground surface.

The proposed west landfill expansion should be expected to temporarily alter the current ground water flow patterns, at least within the footprint of the existing landfill and proposed west expansion. Specifically, the early stages of cell construction will consist of opening relatively large excavations as much as 40 feet deep. These excavations will function as ground water "sinks" (areas of reduced hydraulic head) that will cause ground water to flow toward the excavations. In areas where ground water currently flows away from the landfill, the flow may be reversed to flow toward the excavations during these phases. If, after construction, the landfill is operated with a pumped underdrain system, these flow reversals may continue indefinitely, though we estimate that the ground water flow pattern should only be significantly altered within Units I and II.

Additional temporary modification of the current ground water flow patterns may occur as the accumulated weight of refuse within the landfill mobilizes shear-induced excess pore water pressures in the foundation soils. It should be noted that these pore water pressures are most pronounced in clayey soils that typically function as aquitards (e.g., Units II through IV-A). Shear-induced excess pore water pressures should be expected to function as a "mound" of increased ground water pressure within the footprint of the landfill. Ground water flow induced by excess pore water pressures may be extremely complex, so that the exact nature of this modification cannot be confidently stated. The pressurized ground water should be expected to temporarily flow laterally away from the loaded area (the area causing pressurization of the pore water, generally defined by the footprint of the landfill).

Ground water may temporarily flow upward and/or downward to more permeable zones in which pore water pressures have equalized at levels lower than those present within massive clay strata at the site. In any case, the influence of excess pore water pressures on ground water flow should be localized within the footprint of the landfill and should be expected to diminish with time.

**521.E.1.b.i**

**b. Delineation of the following, from all available information, for all recognized aquifers which have their upper surfaces within 200 feet of the ground surface:**

**i. Areal extent;**

**Response:**

According to "Groundwater Resources of the Greater New Orleans Area" Water Resources Bulletin No. 9 published on July 1966 by the Department of Conservation, Louisiana Geological Survey and the Louisiana of Public Works, the "200-Foot" sand aquifer underlies the site. Plate 3 of the aforementioned reference, presented in this permit application Figure 29, shows the areal extent of the "200-Foot" sand aquifer.

**521.E.1.b.ii.**

**ii. Thickness and depth to the upper surface;**

Response:

According to the Water Resources Bulletin No. 9, July 1966, the "200-Foot" sand is generally 150 to 200 feet below mean sea level. Furthermore, using electric logs from two deep wells; Waterford Oil Company, Well No. 1 (Louisiana State Serial No. 64785 and American Cyanamid Company Disposal Well No. 2 (no state serial number) and the gamma log of Jefferson Parish Water Well, Jf-60), the 200-Foot sand below the site ranges from 180 feet below ground surface at the northeast end of the site, to 200 feet below ground surface at the southwest end of the site. The sand thickens southwestward from 80 feet at the northeast end to 100 feet at the southwest end. A generalized cross section based on this information is shown on Figure 19.

Additional exploration was performed for the proposed west landfill expansion. This exploration revealed that, at depths of 125 to 130 feet below the existing ground surface, massive deposits of dense to very dense gray fine sand and silty sand were encountered in Borings EE-B-6-02 and EE-B-12-02. These soils have been identified as the "200-ft" sand strata in previous characterizations of the site. In the letter of 13 January 2003 Section V, these sand strata are referenced as Unit IV. Figures 1 through 19 of the geotechnical report of 6 January 2003 Section V, indicates that these sand strata are typically encountered 200 to 220 feet below the ground surface near the currently active channel of the Mississippi River. However, the figure further indicates the sand strata were encountered at the Pleistocene interface at a depth of approximately 60 feet below the ground surface at a distance of 7,000 feet from the Mississippi River along Transection Line A-A. This indicates a rise in the surface of the sand strata that is consistent with the sand being encountered at a depth of approximately 130 feet below the ground surface at the River Birch site.



**521.E.1.b.iii.**

**iii. Any interconnection of aquifers; and**

**Response:**

According to the Water Resources Bulletin No. 9, July 1966, the "200-Foot" sand zone may be hydraulically connected to shallower sands that are not geologically a part of the "200-Foot" sand zone. These shallower sands are related to point bar deposits or distributary channel deposits. The stratigraphic sequence observed at the site is typical of backswamp depositional environments with occasional silty deposits due to river bank overflows. Furthermore, the second aquifer identified at the site, approximately 10 feet thick and found at a depth of 72 feet bgs, is not hydraulically connected to the Zone "A" aquifer (i.e., uppermost aquifer) as indicated by the noticeably hydraulic head difference between piezometer B-4, P-1, set in second aquifer identified at the site, and piezometers B-4, P-2 and B-9, P-3, set in the uppermost aquifer (see Figure 27). Therefore, it is deemed that at the site there is no interconnection between the "200-Foot" sand aquifer and shallower water bearing zone.

Based on information presented in response to Item 521.E.1.a.i, interconnection between water bearing zones or aquifers (Units I, IV-B, and IV-D) should not be anticipated. Each of these zones exhibit distinct and different origins and the zones are separated by well-defined aquitard strata.

**521.E.1.b.iv.**

**iv. Direction(s) and rate(s) of groundwater now shown on potentiometric maps.**

Response:

Water Resources Bulletin No. 9, July 1966, indicated that two pumping tests performed in the "100-Foot" aquifer yielded hydraulic conductivity results of 230 to 400 gallons per day per square foot. The "100-Foot" aquifer appears to correspond to Unit IV of the subsurface hydrology. Assuming a porosity of 30 percent and a horizontal gradient range of 1 foot per 1,000 feet to 1 foot per 10,000 feet (typical for flat undisturbed aquifers) the groundwater flow rate was calculated to vary from 37.5 ft/yr to 653 ft/yr.

The general direction of groundwater flow in the upper zone indicated in the original geotechnical investigation conducted by Woodward-Clyde in 1994 was toward the east toward the Sauls Canal with flow velocity of 1.4 feet per year. An additional study was conducted in 2002 by Eustis Engineering Company, Inc. on the West Expansion site which revealed a general direction of flow from southwest to northeast toward the excavation within the landfill. This information indicated a flow velocity of less than 1 foot per year.

**521.E.2.**

**2. The following information on subsurface hydrology is required for Type II landfarms. Delineation of the following information for the water table and all permeable zones from the ground surface to a depth of at least 30 feet below the zone of incorporation:**

Response:

Not applicable. This application does not include Type I or II landfarms.

**F. Facility Plans and Specifications.** Standards governing facility plans and specifications are contained in LAC 33:VII.711.B (Type I and II landfills), LAC 33:VII.713.B (Type I and II surface impoundments), LAC 33:VII.715.B (Type I and II landfills), LAC 33:VII.717.E (Type I-A and II-A facilities), LAC 33:VII.721.A (Type III construction and demolition debris and woodwaste landfills), LAC 33:VII.723.A (Type III composting facilities), and LAC 33:VII.725.A (Type III separation facilities). Standards for groundwater monitoring are contained in LAC 33:MI.709.E (Type I and II facilities).

**1. Certification--The person who prepared the permit application must provide the following certification:**

"I certify under penalty of law that I have personally examined and I am familiar with the information submitted in the below referenced permit modifications and that the facility as described in this permit application meets the requirements of the Solid Waste Rules and Regulations. I am aware that there are significant penalties for knowingly submitting false information, including the possibility of fine and imprisonment."

Response:


The original permit application certification was provided by Mr. Ara Arman, P.E., Louisiana Registration Number 5269. This certification is included in Attachment 12.

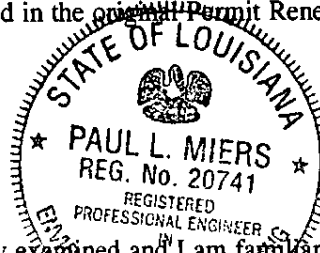
Permit Modification Numbers 3, 4, 5, 6 and 7 were prepared by Mader-Miers Engineering, Inc. Any changes made by these modifications were made under the direction of Paul L. Miers, P.E., Louisiana Registration No. 20741. This certification is included in Attachment 12.

Sections 521.D.1.a through 521.E.2, a portion of Section 521.F.4.a, Section 521.F.5.a, and Section 521.F.5.f of Permit Modification Number 7 were prepared by Eustis Engineering Company, Inc. Any changes made by these modifications were made under the direction of Chris L. Saucier, P.E., Louisiana Registration No. 26121. This certification is also included in Attachment 12.

The 2005 Permit Renewal Application was prepared by Paul L. Miers Engineering, LLC. Any changes made as part of this Renewal Application were made under the direction of Paul L. Miers, P.E., LA. Reg. No. 20741. Responses to Notice of Deficiencies to this application were made under the direction of Steve Burnham, P.E. of Engineering Associates, Inc. (LA. Reg. No. 24029).


"I attest under penalty of law that I have personally examined and I am familiar with the information submitted in the above referenced permit renewal and that the facility as described in this permit application meets the requirements of the Solid Waste Rules and Regulations. I am aware that there are significant penalties for knowingly submitting false information, including the possibility of fine and imprisonment." This statement is limited to the information provided in the original Permit Renewal Application dated June 13, 2005.

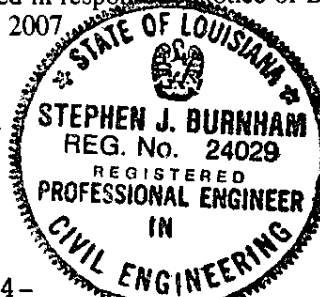
  
Paul L. Miers, P.E.  
La. Reg. No. 20741



2-28-07  
Date

"I attest under penalty of law that I have personally examined and I am familiar with the information submitted in the above referenced permit renewal and that the facility as described in this permit application meets the requirements of the Solid Waste Rules and Regulations. I am aware that there are significant penalties for knowingly submitting false information, including the possibility of fine and imprisonment." This statement is limited to the information provided in response to Notice of Deficiencies applicable to the original Permit Renewal Application dated March, 2007.

  
Engineering Associates, Inc.  
Steve Burnham, P.E.  
La. Reg. No. 24029



3/1/07  
Date

**521.F.2.a.**

**2. The following information on plans and specifications is required for Type I and II facilities:**

**a. Detailed plan-view drawing(s) showing original contours, proposed elevations of the base of units prior to installation of the linear system, and boring locations;**

**Response:**

Site contours are shown in Figure 8.1. Boring locations are shown on Figure 31. Proposed elevations of the base of excavation prior to liner installation are shown in Figure 32, Excavation Plan. Excavation plans for the treatment pond is found on Figure 48.

**521.F.2.b.**

**b. Detailed drawings of slopes, levees, and other pertinent features; and**

**Response:**

Cell design drawings are included as Figures 31, 32, 33, and 34. Engineering calculations are presented in Appendix C.

Cell configuration, side slopes, bottom of cell elevations prior to installation of the liner system, and pressure relief system sump and riser pipe locations are shown in Figure 32.

Top of clay liner elevations are shown in Figure 33.

Cell configuration, bottom of cell elevations after installation of the liner system, leachate collection system sump and riser pipe locations, and are shown in Figures 33 and 34.

Cell configuration and final cap grade are shown in Figures 35 and 42. The conceptual landfill gas collection system is shown on Figures J1 and J2.

Cross sections through the cell are shown in Figures 36 and 37.

Filling sequence is shown in Figure 38.

Liner and cap details are shown in Figures 39, 40, and 41.

Leachate collection system details are shown in Figures 40 and 41.

Riser pipe and sump details are shown in Figures 40 and 41.

Site development features are shown in Figures 31 and 42. This figure shows the layout of the cell; the configuration of the final cover at closure; the site drainage system; and locations of the proposed outfalls, proposed monitor wells, scale, and various site structures. The location of white goods storage area will be determined by site operations.

Plans and details for the Operations Area are found on Figures 43 and 44.

Plans and details for the treatment pond are found on Figures 48 and 49.

Plans for the final cap drainage system are found on Figure 46.

Site grid plan can be found on Figure 47. Miscellaneous sections and details for the landfill and pond are found on figures 50 and 51.

Slopes and levees can be found in Figures 31-34.

**521.F.2.c.**

**c. The type of material and its source for levee construction. Calculations shall be submitted demonstrating that an adequate volume of material is available for the required levee construction.**

**Response:**

Landfill levees are constructed of clay. Material to construct the levees is obtained from excavation of the cells. All material used for earthwork construction in the landfill will be tested to assure that it meets applicable standards.

A construction quality assurance (CQA) plan is included in Appendix D. Soil for construction of levees for the operations area and treatment pond will be obtained from excavation of cells, or treatment pond excavation. On-site excavation will be sufficient for levee construction.

**521.F.3.a.**

**The following information on plans and specifications is required for Type I, II, and III landfills:**

- a. approximate dimensions of daily fill and cover; and**

**RESPONSE:**

Volume of daily fill is estimated to not exceed 17,500 cubic yards/day (cu.yds./day.). This is based on handling 13,000 tons per day and compaction to achieve 55 pounds per cubic foot (lbs/ft<sup>3</sup>). Filling at the rate of 17,500 cu. yds./day equates to a disposal area occupying a volume of approximately 100' x 100' x 45'. Daily cover will consist of a minimum of 6 inches of soil, alternate daily cover or a synthetic cover. Filling and covering operations are discussed in the Operation Plan in Appendix A.1.0. Procedures for the use of alternate daily cover or synthetic cover are covered in the operational plan.



**521.F.3.b.**

**b. The type of cover material and its source for daily, interim, and final cover. Calculations shall be submitted demonstrating that an adequate volume of material is available for daily, interim, and final cover.**

**Response:**

River Birch uses silty clay, sandy clay, or clay material for daily and interim cover. Daily cover is applied at a minimum thickness of six inches to minimize vector-breeding areas by controlling insects, rodents, birds, attraction of other animals, and controlling leachate by minimizing infiltration and erosion and. Cover materials should contain minimum amounts of moisture and should not contain high concentrations of constituents monitored in the leachate. The cover material used at the facility also reduces fire hazard potential by limiting the amount of oxygen reaching the waste, reduce noxious odors, allows accessibility regardless of weather, and provides an aesthetic appearance to the landfill operation by minimizing blowing paper and litter. Interim cover is applied at a minimum of twelve inches. Material for daily and interim cover will be obtained from the excavation of the cells and stockpiled onsite so that cover material will always be accessible. Landfill excavation and embankment quantities are tabulated in Appendix C. Clay will be used in the final cover. Clay for the final cover will be obtained from on-site excavation.

Synthetic daily cover and alternate daily cover materials are used to supplement on-site excavation quantities. Any other alternate daily cover materials will be submitted to the LDEQ for approval. Procedures to be followed for use of synthetic cover and alternate daily cover are discussed in the Operational Plan in Appendix A.

**521.F.4.a.**

**4. The following information on plans and specifications for the prevention of groundwater contamination must be submitted for Type I and II facilities:**

**a. Representative cross-sections and geologic cross-sections showing original and final grades, approximate dimensions of daily fill and cover, drainage, the water table, groundwater conditions, the location and type of liner, and other pertinent information;**

**Response:**

Geologic cross-sections for the eastern portion of the site are shown on Figures 12 through 17 and 22 of the Woodward Clyde Geotechnical Report found in Volume III Section V Part VII. Geologic cross-sections for the western portion of the site are shown on Figures 2 through 11 of the Eustis Engineering report found in Volume III Section V Part XI and on Enclosures 2 through 10 of the Eustis Engineering January 10, 2003 report found in Volume III Section V Part XVI.

Typical sections through the landfill at capacity are shown in Figures 36 and 37. Approximate dimensions of daily fill are shown on Figure 38. Typical sections of the leachate treatment pond are shown on Figure 49. Miscellaneous landfill and leachate treatment pond details are found on Figures 50 and 51.

**521.F.4.b.**

**b. A description of the liner system, which shall include calculations of anticipated leachate volumes, rationale for particular designs of such systems, and drawings; and**

**Response:**

River Birch installed a composite liner system for the landfill cells consisting of a 60 mil HDPE geomembrane over a geosynthetic clay liner (GCL) over a 40 mil HDPE geomembrane over one foot of recompacted clay. This composite liner system provides equivalent or greater groundwater protection as compared to the clay liner. Design calculations, as required by LAC

33:VII.711.B.5.c. are included as Appendix C of the permit application. The results of the HELP model analysis for the liner system is provided in Appendix C. A construction quality assurance (CQA) plan is included as Appendix D of the permit application as required by LAC

33:VII.711.B.5.b. The facility is designed with a composite liner system as described in the standards of LAC 33:VII.711.B.5.d except that in lieu of three feet of recompacted clay, River Birch has installed a GCL, 40 mil HDPE geomembrane and one foot of recompacted clay. In lieu of an individual GCL installed over a separate 40 mil HDPE geomembrane, a Geomembrane Supported Geosynthetic Clay Liner (GSGCL) may be used. The GSGCL consists of the same 40 mil HDPE except that a layer of sodium bentonite (at a rate of approximately one (1) pound per square feet of HDPE) is directly attached to the Geomembrane. The GSGCL is installed in the same manner as the two separate individual systems except that the GSGCL is overlapped a minimum of 12 inches in lieu of the HDPE being welded and the GCL being lapped by six inches. The facility is designed with a pressure relief system to remove water that might accumulate between the excavation and the liner system, a special design condition, in response to LAC 33:VII.711.B.5.g. Operation of the pressure relief system is discussed in the Operation Plan, Appendix A, of the permit application.

Construction of the liner system consists of excavation, installation of a pressure relief system, and installation of a composite liner system, installation of leachate collection net and installation of protective cover. Excavation elevations are shown on Figure 32. Liner elevations and slopes are shown on Figure 33. Liner details are shown on Figures 39 and 40. Excavation, installation of the pressure relief system, and installation of the composite liner system are discussed below. Miscellaneous landfill details are found on Figures 50 and 51.

**EXCAVATION**

Cells 1-31 were excavated to a maximum depth of -1 6' MSL with the pressure relief sump being excavated three feet deeper to -19' MS L. The slope from the ground surface to the base of the excavation is 10(H):1(V) for a factor of safety of 1.5 or greater against a slope failure. The grade slopes 2 percent from the cell edge toward the leachate collection pipes and then a minimum of 1.6 percent to the collection sumps. The grades presented in the design take into account settlement for various portions of the landfill. Cells 32-51 will be excavated to a maximum depth of -40' MSL with the pressure relief sump being excavated three (3') feet deeper to -43' MSL. Other slopes will be similar to cells 1-31 except that the slope to collections sumps will be 2.0 percent. The grades are greater than the minimums to maintain the regulatory minimum value after settlement at all points along the base of the landfill. Calculations for basal heave, slope stability and settlement are included.

## **PRESSURE RELIEF SYSTEM**

The pressure relief system consists of a sandwich of drainage net (10 gal/min/ft) between two geotextile layers (No. 100 to 140 sieve size) placed on the excavated subgrade, which slopes -2% toward the center of the cell and 1.6% for cells 1-31 and 2.0% for cells 32-51 toward the sump. The pressure relief sump collects from the drainage system for removal. The sump is approximately 2 feet deep by 12 feet wide square at the bottom with approximately 1(H):1(V) side slopes.

A 6" collection pipe is located at the center of the cell and slopes to the pressure relief sump at 1.6% in cells 1-31 and 2.0% in cells 32-51 to further aid in removing water which may seep into the bottom of the cell.

The system handles groundwater, assuming it is above the base of excavation, for equivalent subgrade permeability as high as  $1 \times 10^{-5}$  cm/sec.

Typical laboratory permeability values for the insitu clay are less than  $1 \times 10^{-6}$  cm/sec. All piping for the pressure relief system is high density polyethylene (HDPE) with a minimum SDR value of 17.

## **COMPOSITE PRIMARY LINER SYSTEM**

A composite liner is installed directly above the pressure relief system. The composite liner consists of a 60 mil HDPE geomembrane over a GCL over a 40 mil HDPE geocomposite over one foot of recompacted clay having a maximum permeability of  $1 \times 10^{-7}$  cm/sec. In lieu of the individual GCL and 40 mil HDPE a composite GSGCL using a 40 mil HDPE may be used. A 60 mil high density polyethylene (HDPE) geomembrane will be placed in direct contact with the GCL.

## **LEACHATE TREATMENT POND AND INTERIOR PERIMETER DITCHES**

The leachate treatment pond and interior perimeter ditches located in cells 32-51 will be constructed with 3' of recompacted clay having a maximum permeability of  $1 \times 10^{-7}$  cm/sec overlaid by a 60-mil HDPE geomembrane liner in direct contact with the clay. In the area of the pond where silt will settle a 12" protective layer of soil will be placed over the 60-mil HDPE with a slab of concrete or other protective material installed over the soil. This protective layer will allow equipment to access the pond and remove silt without damage to the HDPE liner. In the interior perimeter ditches 24 inches of protective soil to be placed above the 60 mil HDPE to protect the HDPE liner and to allow excess silt which settles in the ditches to be removed without damage to the synthetic liner.

A pressure relief system identical to the system installed in the landfill will be installed below the 3 feet of recompacted clay in the leachate treatment pond. Water collected in the pond pressure relief system will flow to collection sumps via 6" collection pipe, where the water will be removed by dedicated pumps.

Slope stability analysis can be found in Volume II Section VI Figures of River Birch Modification No. 7 dated March 5, 2003.

#### 521.F.4.c.

c. A description of the leachate collection and removal system, which shall include calculations of anticipated leachate volumes, rationale for particular designs of such systems, and drawings.

#### Response:

Construction of the leachate collection and removal system involves grading of the bottom of the cell and the installation of collection sumps and riser pipes. Leachate collection and removal system locations and construction details are shown in Figures 34, 39, 40, and 41. Design calculations for leachate volumes are presented in Appendix C. A CQA plan for liners and other systems are included in Appendix D. Operation of the leachate collection and removal system is discussed in the Operation Plan in Appendix A.

#### PRIMARY LEACHATE COLLECTION AND REMOVAL SYSTEM

The primary leachate collection and removal system consists of a drainage net (10/gal/min/ft) sandwiched between two geotextile layers (No. 100 to 140 sieve size), located above the primary liner, covered with a 1- to 2-foot thick granular protective layer.

#### Grade

The system has a 2 percent minimum fall to the leachate collection pipes spaced 100 feet from the highest subgrade point. The leachate collection pipes have a 1.6 percent minimum fall in cells 1-31 and 2 percent fall in cells 32-51 from the highest collection point to the collection sump.

#### Sump

The leachate collection sump is 3 feet deep, 20 feet wide at the base with 2(H):1(V) side slopes. The sump contains ASTM C-33 gravel encapsulated in a geotextile layer (No. 100 to 140 sieve size). This design should contain one day of the peak daily flow from a 24-hour, 25-year storm event, with a cover system in place. The collection sump is not intended to control normal rainfall within an uncovered cell.

#### Pipe

All piping for the primary leachate collection and removal system is HDPE with a minimum SDR value of 17. The leachate collection pipe is 6 inches in diameter with a double row of perforations less than 3/8-inch in diameter spaced 6 inches from center to center, off-set by 3 inches, oriented along the bottom of the pipe. The leachate pipe will be slotted with a maximum slot width of 1/4 inch. The leachate collection pipe is placed in a swale surrounded by ASTM C-33 gravel encapsulated by a geotextile layer (No. 100 to 140 sieve size) and is sloped down toward the perimeter of the unit. This gravel backfill provides additional support and protection to the leachate collection pipe. The leachate collection pipes discharge into the leachate collection sump. The leachate head will be maintained in a pumped-down condition such that 1 foot of head will exist above the lowest bottom elevation of the leachate collection pipes.

The leachate extraction pipe is 18 inches in diameter. A small diameter pipe can be specified subject to the pump selection. The leachate extraction pipes and the leachate collection pipes are all designed with access ports for cleanout. These access ports are all located at the surface near the pump pad for each sump. An HDPE rub sheet is located beneath the extraction pipe in the sump. On Cells 13-31 and on the old leachate treatment pond an additional vertical rise pipe will be installed at each leachate collection sump to extend vertically upward as waste is placed over the sump to allow pump access. These vertical pipes will extend all the way to the top of the final grades. See Figure 40A for details of these vertical risers.

The purpose of the cleanout pipes for the leachate collection is to provide access to leachate collection pipes and sumps for maintenance to the sumps, pumps, and pipes, as necessary. Deflection of the leachate pipes will not impede maintenance of the leachate collection sumps, pumps, or pipes. Cleaning and other maintenance of the collection sumps and pipes can be accomplished by flexible cleaning equipment and is adequately sized to accommodate normal facility operations.

Leachate collection pumps are equipped with discharge lines which connect to the perimeter force-main. All force-main lines are pressure tested prior to their use.

Leachate is removed from leachate collection sumps by pumps located in the leachate collection sumps. Leachate collection pumps are activated by level control switches. All control systems for pumps, valves and meters are designed to be operated from the ground level. Leachate is removed from the surface of the active module by portable pumps. These pumps are manually controlled and activated on an as-needed basis. Leachate is discharged to the leachate treatment pond for treatment prior to being discharged to the Saul's Canal. Representative samples of raw leachate are collected and analyzed annually for the same parameters required for the facility groundwater monitoring wells in LAC 33:VII.709.E.4. Once the injection wells are operational, leachate will be piped to the injection well site and filtered and pH adjusted, if necessary, before deep well injection.

### **Protective Layer**

Directly above the collection and removal pipes and sumps is a 1- to 2-foot layer of protective cover. The purpose of this layer is to protect the underlying synthetics. The drainage net will provide the transmissivity capacity to meet the Minimum Technology Guideline or the design requirements.

### **Daily Cover**

Infiltration of water into the waste will be minimized by daily, interim and final cover as required in LAC 33:VII.

**521.F.5.a.**

**5. The following information on plans and specifications for groundwater monitoring must be provided for Type I and II facilities:**

**a. A minimum of three piezometers or monitoring wells in the same zone must be provided in order to determine groundwater flow direction;**

**Response:**

Seven piezometers were installed at the site to monitor groundwater elevations and determine groundwater flow direction before the site was opened. Groundwater elevations were measured and recorded on a monthly basis during the period October 1994 - February 1995. Using this data, groundwater flow direction was determined and is shown on potentiometric surface maps, Figures 23 through 26. These Figures were included as part of the Woodward Clyde Report prepared for the original permit application and are found in Volume III Section V Part VII.

An additional six temporary standpipe piezometers were installed between 25 November 2002 and 3 December 2002 at the locations shown on Enclosure 1 of the Eustis Engineering Geotechnical Report dated 10 January 2003. Three of these temporary piezometers (EE-P-1-02, EE-P-3-02, and EE-P-5-02) were installed to monitor ground water flow in Unit I. The ground water levels within these piezometers were recorded on 4 December 2002, 9 December 2002, 17 December 2002, and 3 January 2003. Contours of ground water elevations for each of these dates are shown on Enclosure 11 of that letter. These contours indicate that ground water flow in Unit I within the area of the proposed west landfill expansion is generally from the northeast to the southeast. It should be noted that this trend is anomalous with respect to the anticipated flow directions. Based on prior groundwater flow studies for the existing landfill (see Figures 23- 26 referenced above) and subsequent observations in monitoring wells at the site, the general groundwater flow is in a southeasterly direction. This direction of flow is confirmed by a recent Groundwater Elevation Contour Map (November 29-30, 2006) prepared by Engineering Associates, Inc. The Groundwater Elevation Contour Map dated November 29-30, 2005 is included in Volume III, Section V, Part VII. Given the relatively small groundwater gradients observed at the site, the anomalous observations may be associated with seasonal fluctuations and groundwater flow directions.

A combined groundwater elevation contour map showing both the West Expansion Area and the existing River Birch Landfill has not been prepared due to the fact that groundwater measurements for these two (2) areas were collected on different dates. However, a comparison of groundwater elevations from the different dates indicates that groundwater flow within the West Expansion Area is towards the existing River Birch Landfill. Regardless, groundwater flow direction within Unit I of the West Expansion Area can be expected to flow towards active areas of the landfill once construction has commenced and once recovery of pore water has begun.

Three standpipe piezometers (EE-P-2-02, EE-P-4-02, and EE-P-6-02) were installed within Unit II to a depth of 40. Observations of ground water levels for all piezometers in Unit II are shown on Enclosure 12 of the letter dated 13 January 2003. These observations indicate that ground water within Unit II generally flows from southwest to northeast, the general plan direction for ground water flow toward the landfill excavation.

**521.F.5.b.**

b. For groundwater monitoring wells, cross-sections illustrating construction of wells, a scaled map indicating well locations and the relevant point of compliance, and pertinent data on each well, presented in tabular form, including drilled depth, the depth to which the well is cased, screen interval, slot size, elevations of the top and bottom of the screen, casing size, type of grout, ground surface elevation, etc;

Response:

Based on the potentiometric surface maps developed for the site, and the subsequent determination of groundwater flow direction plus relocation of Sauls Canal, relevant points of compliance have been selected and are shown on Figures 54, 55 and 56. The screened interval of the monitor wells are shown on Table 1 of the Groundwater Sampling and Analysis Plan. (Found in Appendix B) Monitoring wells have been installed upon approval by the Solid Waste Division. As wells were installed tables of pertinent well information were prepared and submitted to LDEQ-SWD along with well as-built cross-sections illustrating construction of wells. This information is also included in the Groundwater Sampling and Analysis Plan.

Development of the groundwater monitoring system for the eastern portion of site was constructed in five phases as illustrated on Figures 54 through 59 where were part of the Soil Testing Engineers Geotechnical Report and are found in Volume III Section V Part IX. Phase I consisted of 6 permanent wells, MW-1 through MW-6 and 3 temporary wells, T-1 through T-3.

Phase II of the monitoring well installation consisted of the installation of an addition permanent well, MW-7. This well was installed prior to the leachate treatment pond beginning operation. Phase III consisted of abandonment of the 3 temporary wells and installation of 8 additional permanent wells MW-8 and MW-15 and installation of three additional temporary wells T-7, T-8 and T-9. With this installation the entire eastern portion of the landfill will be monitored with 4 up gradient wells; MW-1, MW-6, MW-11 and MW-15. There will be 11 down gradient wells; MW-2 through MW-5, MW-7 through MW-10 and MW-12 through MW-14. Cross-sections for the current monitoring wells have been included in Volume III, Section V, Part XI. The three temporary monitoring wells T-7, T-8 and T-9 will remain in place until cell construction reaches cells 30 and 31 where these wells are installed, at that time, the three temporary wells will be removed, plugged and abandoned in accordance with the groundwater sampling and analysis plan. The grout used for construction of new wells and plugging and abandonment of existing wells will be a cement/ bentonite mixture prepared in accordance with applicable DOTD standards. When the disposal operation moves into the western portion of the landfill and the new leachate treatment pond is constructed, wells MW-1 and MW-15 will be plugged and abandoned and 12 new wells MW-16 through MW-27 installed and will serve as points of compliance for the area. These wells will be upgradient. These new wells will be installed on approximately 800 foot centers and will provide monitoring across the entire western side of the facility as well as portions of the northern and southern ends. As landfill construction advanced southerly, monitoring wells MW-6, and MW-11 which were originally located along the western side of the original site will be plugged and abandoned. When the monitoring well network is completely installed and all wells to be removed abandoned, River Birch Landfill will have 23 monitoring wells.

Pervious zones versus well screen depth for all proposed wells are given on Table 1 of the Groundwater Sampling and Analysis Plan.



**521.F.5.c.**

**c. A groundwater monitoring program including a sampling and analysis plan that includes consistent sampling and analysis procedures that ensure that monitoring results provide reliable indications of groundwater quality;**

**Response:**

A total of 15 groundwater monitoring wells were originally proposed to be installed at the facility, all of which are now in place (see Figure 59 found in Volume III Section V Part IX). A letter of explanation for the wells spacing between wells MW-9 and MW-10 has been provided in Volume III, Section V, Part IX. Semi-annual sampling of all site wells are performed at the facility and reports summarizing all sample analysis results are submitted to the LDEQ on a semi-annual basis. All sampling and analysis has been performed in accordance with the approved Groundwater Sampling and Analysis Plans for the facility included as Appendix B of the permit application. This plan will be closely adhered to, to assure that all monitoring is conducted the same regardless of the personnel conducting the sampling.

Adherence to the Groundwater Sampling and Analysis Plan ensures that sample collection provides representative samples of the zone being monitored, prevents cross-contamination and tampering with the samples. This plan also provides for proper preservation and shipping to ensure integrity of the samples. Appropriate numbers of duplicates, spikes, laboratory and field blanks, and chain of custody control. The statistical methods, analytical procedures, and sampling frequency are all based on approved methods and are provided in the amended Table 2 of the Groundwater Monitoring Plan.

In conjunction with the proposed expansion of the landfill, twelve additional monitoring wells will be constructed. The wells will be placed on the upgradient (west) side of the landfill adjacent to South Kenner Avenue and along the northern and southern sides of the western portion of the site.

With regard to the time-frame during which the wells will be installed, the wells will be constructed prior to disposal operations moving into cell 32 to maintain adequate upgradient monitoring of active portions of the Landfill. Each well will be four inches in diameter and will be approximately 20 feet in length. The wells will be screened in the 10-20 foot depth interval, consistent with the existing wells on the site. Well installation activities will be performed in accordance with Attachment 3 to the existing Groundwater Sampling and Analysis Plan entitled "Monitor Well Installation Plan". Once constructed, sampling of the wells will be performed in accordance with the existing Groundwater Sampling and Analysis Plan for the Facility. Four existing wells (MW-1, MW-6, MW-11, and MW-15) are currently located on the upgradient (west) side of the facility and will be plugged and abandoned in accordance with Attachment 4 of the existing Groundwater Sampling and Analysis Plans entitled "Monitor Well Plug and Abandonment Plan". The wells will be plugged as active portions of the landfill encroach on the wells. The wells will be replaced by one or more of the eight proposed wells previously discussed prior to the performance of plugging and abandonment activities.

**521.F.5.d.**

**d. For an existing facility, all data on samples taken from monitoring wells in place at the time of the permit application must be included. (If this data exists in the Solid Waste Division records, the administrative authority may allow references to the data in the permit application.) For an existing facility with no wells, groundwater data shall be submitted within 90 days after the installation of monitoring wells. For a new facility, groundwater data (one sampling event) shall be submitted before waste is accepted;**

**Response:**

All wells at this facility are currently being sampled on a semi-annual basis. Reports documenting all sample analysis results are being and will continue to be submitted to the LDEQ on a semi-annual basis. All sampling and analysis will be conducted in accordance with the groundwater monitoring plan to assure uniformity of results regardless of who conducts the sampling and analysis.

**521.F.5.e.**

**e. A plan for detecting, reporting, and verifying changes in groundwater; and**

**Response:**

A "Groundwater Statistical Evaluation Plan" is included as Attachment 2 of the previously approved Groundwater Sampling and Analysis Plan found in Volume II Appendix B. Statistical evaluation of sample analysis results will be performed after eight independent samples are collected for each sampling parameter. The results of the statistical analyses will be provided to the LDEQ in conjunction with the reporting of groundwater sample analysis results on a semi-annual basis. All sampling and analysis will be conducted in accordance with the Groundwater Monitoring Plan to assure uniformity of results regardless of who conducts the sampling and analysis.

**521.F.5.f.**

**f. The method for plugging and abandonment of groundwater monitoring systems.**

Response:

A plan for plugging and abandonment of groundwater monitoring wells is included as Attachment 4 of the Groundwater Sampling and Analysis Plan found in Volume II Appendix B.

**521.F.6.**

**6. The facility plans and specifications for Type I and II landfills and surface impoundments (surface impoundments with on-site closure and a potential to produce gases) must provide a gas collection and treatment or removal system.**

**Response:**

**GAS COLLECTION AND TREATMENT SYSTEM**

In accordance with 40 CFR 60.752(b)(2)(ie), River Birch has installed and operates a Landfill Gas Collection and Control System (LFGCCS). The LFGCCS is installed according to the specifications listed in 40CFR60.759 for an active landfill.

River Birch has constructed an active landfill gas collection and treatment system. The system includes collection pipes installed in the landfill, a collection pipe manifold, blower, and flare. Plans showing the landfill gas collection system are included as Figures J1 and J2 found in Volume IV.

Subsurface gas monitoring probes consist of installing perforated PVC pipe in a borehole equal to the depth of the bottom of the waste. The perforated section of these vents is encased in a sand pack and the annulus space around the blank section of pipe is sealed to the surface with a cement-bentonite grout. The gas collection and removal system limits methane gas to lower explosive limits at the facility boundary and to 25% of the lower explosive limits in the facility buildings.

There will be no gas collection system installed for the leachate treatment pond since the potential to produce gas will be very small. Any sludge which remains in the pond will be dewatered and removed once the leachate treatment pond is closed. This will result in clean closure.

**G. Facility Administrative Procedures.** Standards governing facility administrative procedures are contained in LAC 33:VII.711.C (Type I and II landfills), LAC 33:VII.713.C (Type I and surface impoundments); LAC 33:W.715.C (Type I and II landfarms), LAC 33:VII.717.F (Type I-A and II-A facilities), LAC 33:VII.721.B (Type III construction and demolition debris and woodwaste landfills); LAC VII.723.B (Type III composting facilities), and LAC 33:VII.725.B (Type III separation facilities).

**1. The following information on administrative procedures is required for all facilities:**

**a. Recordkeeping system; types of records to be kept; and the use of records by management to control operations;**

Response:

The permit holder shall maintain at the facility all records specified in the application as necessary for the effective management of the facility and for preparing the required reports. These records shall be maintained for the life of the facility and shall be kept on file for at least three years after closure.

A recordkeeping system is used to manage and monitor site operations. The recordkeeping system is described in the Operation Plan in Appendix A. The volumes of water treated and discharged for the leachate treatment pond along with results of quality test taken for each discharge will be maintained for the life of the operation and for three years thereafter.

Records maintained at the facility will include the following:

- Current Louisiana Solid Waste Rules and Regulations
- A copy of the permit
- A copy of the permit application
- Permit modifications
- Copies of all documents received from and submitted to the Solid Waste Division of the Louisiana Department of Environmental Quality and other regulatory agencies
- Correspondence
- Construction records
- Certified field notes for construction
- Records demonstrating that liners, leachate control systems, and leak-detection and cover systems are constructed or installed in accordance with appropriate quality assurance procedures
- Quality assurance/quality control records
- Training records
- Operator training programs
- Board of Certification and Training for Solid Waste Disposal System Operator certificates
- Generator waste profiles
- Waste receipts
- Records of generators of industrial solid waste
- Generator disposer records
- Records on transporters of solid waste indicating date of receipt and Transporter ID Number

- Inspection records
- Groundwater monitoring results
- Records on leachate volume and results of leachate sampling
- Monitoring, testing, and analytical data
- Daily logs
- Inspections by the permit holder or operator including but not limited to inspections to detect incoming hazardous waste loads
- Any other applicable or required data deemed necessary by the administrative authority
- Post-Closure monitoring reports

**521.G.1.b.**

**b. An estimate of the minimum personnel, listed by general job classification, required to operate the facility; and**

Response:

Personnel and general job classifications are included in the Operation Plan in Appendix A, Section 8.0, page 8.1.

Field personnel required to operate the facility in the minimum configuration will consist of at least one scale house operator, two injection well operators, and three equipment operators. At least one of these people shall hold a Level B certification.



**521.G.1.c.**

**c. Maximum days of operation per week and per facility operating day (maximum hours of operation within a 24-hour period).**

**Response:**

The facility reserves the right to operate a maximum of 24 hours per day, 7 days per week. Normal operation will be Monday thru Saturday from 4 a.m. to 8 p.m. The facility may open on Sunday for special occasions, such as Holidays, storm damage disposal, periods of the year where commercial haulers have to work on Sundays to keep up with special high volumes. Operating hours will be posted and when normal operating hours are shortened or exceeded, the Louisiana Department of Environmental Quality will be notified.

**521.G.2.**

**2. Administrative procedures for Type II facilities shall include the number of facility operators certified by the Louisiana Solid Waste Operator Certification and Training Program (RS. 37:3151 et seq.)**

Response:

River Birch Landfill will have the personnel necessary to achieve the operational requirements of the facility. All personnel involved in waste handling at the facility will be trained adequately in procedures to recognize and exclude receipt or disposal of hazardous wastes and PCB wastes. Facilities receiving residential and commercial solid waste shall have the numbers and levels of certified operators employed at the facility, as required by the Louisiana Administrative code, Title 46, Part XXIII. The site will maintain records of facility operators certified by the Louisiana Solid Waste Operator Certification and Training Program and operator certificates will be prominently displayed at the facility.

Staffing will vary from time to time in response to specific landfill needs. At all times during operating hours, the landfill shall be managed by a Level A Operator with a minimum Level B operator on-site. There shall be at least one Level C operator for every 10 operational personnel. Operational personnel do not include clerical personnel.

The Board of Certification and Training for Solid Waste Disposal System Operators and the Office of Environmental Services, Permits Division will be notified within 30 days of any changes in the employment status of certified operators.

The injection or disposal wells will be operated in accordance with LDNR operational guidelines of two (2) operators on-site any time liquid wastes are being injected downhole.

**H. Facility Operational Plans.** Standards governing facility operational plans are contained in LAC 33:MI.711.D (Type I and II landfills), LAC 33:VII.713.D (Type I and II surface impoundments), LAC 33:VII.715.D (Type I and II landfarms), LAC 33:VII.717.G (Type I-A and II-A facilities), LAC 33:VII.721.C (Type III construction and demolition debris and woodwaste landfills), LAC 33:VII.723.C (Type III composting facilities), and LAC 33:MI.725.C (Type III separation facilities).

**1. The following information on operational plans is required for all facilities:**

- a. Types of waste (including chemical, physical, and biological characteristics of industrial wastes generated on-site), maximum quantities of wastes per year, and sources of waste to be processed or disposed of at the facility;**
- b. Waste-handling procedures from entry to final disposition, which could include shipment of recovered materials to a user;**
- c. Minimum equipment to be furnished at the facility.**

Response:

Types of wastes to be handled, maximum annual quantities, and sources of waste to be processed or disposed are shown on The Permit Application found in Volume I Section III Part I and are discussed in the Operation Plan found in Volume II Appendix A.2.0.

Waste handling procedures are discussed in the Operation Plan in Appendix A.2.0.

Equipment to be used at the facility is discussed in the Operation Plan in Appendix A.7.0.

The original leachate treatment pond is designed to trap silt on the south end of the pond with clean water being stored on the north end until it is discharged. The south end of the pond is constructed with a 12-inch protective layer of soil over the 60-mil HDPE liner overlaid with a hard surfacing such as concrete, to support cleaning equipment which will remove silt build-up. The pond is monitored on a quarterly basis for silt build-up. A curtain wall is installed across the treatment pond, at the north edge of the slab. This curtain wall will trap silt to assure that the major build-up of silt occurs over the slab. When silt depths exceed 3-4' above the design grade, the pond will be drained and silt removed. This silt will be placed in one of the active landfill disposal cells. Any excess vegetation occurring in the pond will also be removed and placed in the landfill. This program will insure that the design capacity of the pond is maintained. The original leachate treatment pond will be converted to a disposal cell and a new and larger leachate treatment pond constructed at the south end of the site when disposal operations move into the western portion of the site. The new leachate treatment pond will be constructed similar to the original pond except reversed with the silt removal area located on the north end of the pond and the water storage area located on the south end of the pond. Calculations showing storage volumes, loading and pond size for the new pond are found in Appendix C.

The temporary interior perimeter ditch constructed within the west will be maintained around the interior of the landfill along the edges of cells 1-31 and is designed to slope toward the existing leachate treatment pond. This slope will maintain positive drainage and assure no ponding water. Because of the relative flat slope, this ditch will be subject to the silt build-up. To maintain drainage capacity, the interior perimeter ditch will periodically have to be cleaned. The ditch will be monitored quarterly for silt build-up more than 24" in depth. When silt depth exceeds 24 inches, the ditch will be cleared. If possible, this clearing will be delayed until the fall of the year when rainfall

rates decrease and clearing will be easier. When the disposal operation moves into The West Expansion (Cell 32) and the new leachate treatment pond will be constructed at the south end of the site the landfill cell 32 will be connected to the leachate treatment pond by a new permanent interior ditch. The initial section of ditch will be constructed along the northern and western sides of the site. This ditch will begin on the west side of cell 6 and extend west and south to the leachate treatment pond. The ditch will be excavated to elevation -1.5 at its north end and elevation -10 at its south end. The side will be constructed at a 3H to 1V slope to elevation +4.5 ft. Once constructed the ditch will be lined with 3 feet of compacted clay having a maximum permeability of  $1 \times 10^{-7}$  cm/sec. and then covered by a 60 mil HDPE liner. The HDPE will be covered by 2 feet of compacted clay to protect the liner from damage when the ditch is cleaned. The final top elevation of the ditch will be +7.5 feet to allow the ditch to transfer the 25 year storm event with out over topping. The 24 inches of compacted clay will be installed in an initial 12 inch lift to prevent damage to the liner, the remainder will be completed in two (2) 6 inch lifts. All compaction will be to 90% standard density.

Perimeter levees of the landfill and leachate treatment pond are monitored for erosion on a continuous basis. The interior of the leachate treatment pond levees are protected by the 60-mil liner. The interior of the landfill has protective cover of soil over the 60-mil liner. Both of those layers protect the base of the levee from erosion. The exterior of all levees are protected by vegetation to reduce erosion. Excessive erosion is repaired as it occurs. The height of the levees is monitored for settlement on a yearly basis. Elevations are checked by a licensed surveyor or by aerial contours to assure that grades do not settle more than 18" below the final elevation of 7.5' MSL.

The leachate treatment pond, perimeter levee and interior ditch are monitored by landfill personnel for signs of deterioration, excessive vegetation, malfunction, etc. After rainfall events, they are checked for deterioration and water elevation. The original pond is designed to operate under normal conditions between elevations -1.0 MSL to -7.0 MSL. This storage volume represents over 1.5 million cubic feet or approximately 2 months of average rainfall runoff. When water depth approaches this elevation analysis of the water is made to assure compliance with discharge requirements and water discharge from the facility. Any evidence of deterioration found during these inspections is repaired as soon as possible.

In the event of a 25-year storm, storage capacity between -1.0' MSL and +5.0' MSL is more than 2.5 million cubic feet. This equals the runoff from approximately 80 acres during the 25 year rainfall.

When this type of event occurs, the landfill perimeter ditch and treatment pond levees will carefully be checked to assure no damage occurs. Any erosion will be corrected as soon as water levels return to normal.

Excess vegetation in the perimeter ditch or pond is removed when those areas are cleaned out. If necessary, special cleaning will be performed to remove specific vegetation.

The final design height of the levees is at elevation 7.5' MSL, approximately 4' above flood elevation. Should more than 18" of settlement occur, additional soil will be added to bring the elevation back to design grade.

The new leachate treatment pond to be constructed near the south end of the site operated similarly to the original pond except that its range of operation will be from -1 to -8 and storm storage will be from -1 to +5 providing more than 5.4 million cubic feet of storage for normal conditions and 7.5 million cubic feet of storage for storm events. A gravity discharge will allow water level to be lowered to -2 feet with the last 6 feet being pumped down to -8 elevation.

**521.H.1.d.**

**d. Plan to segregate wastes, if applicable;**

**Response:**

River Birch does not accept shipments of only white goods. These shipments are directed to a salvaging facility. White goods that enter the site in mixed waste shipments are segregated and stored in an area designated for white goods. The white goods storage area moves with the active cell and is not shown on the figures. White Goods are removed from the site on a monthly basis and taken to a salvaging facility. The number of white goods on site is dependent on the number brought in. Landfilled waste will not be segregated for disposal. Some construction/demolition materials and large limbs and branches may be stockpiled near the active cell for use in building access roads across the waste. If not used for road materials, this waste will be covered every thirty days. These materials will be placed over the top of the waste and covered with fill sand to form temporary roads within the limits of landfill cells. All other waste (e.g., leaves, clippings,) will be landfilled with the rest of the waste. Handling of white goods is addressed in Section 1.2 of the Operations Plan found in Volume II Appendix A. Liquid waste will not be segregated except for solidification which will occur in a watertight tank. Once solidified, this waste will be disposed of with other waste streams. The handling of asbestos is covered in Section 10.5 of the Operational Plan.

**521.H.1.e.**

**e. Procedures planned in case of breakdowns, inclement weather, and other abnormal conditions including detailed plans for wet-weather access and operations;**

**Response:**

Procedures planned in case of breakdowns, inclement weather, and other abnormal conditions are presented in the Operational Plan found in Volume II Appendix A.9.0.

**521.H.1.f.**

**f. Procedures, equipment, and contingency plans for protecting employees and the general public from accidents, fires, explosions, etc., and provisions for emergency care should an accident occur (including proximity to a hospital, fire and emergency services, and training programs); and**

**Response:**

Emergency procedures are discussed in the Operational Plan in Appendix A.9.0. Letters explaining their services from the local hospital "West Jefferson Medical Center" and the local fire department "Herbert Wallace Memorial Volunteer Fire Company" are found in Volume II, Attachment No. 10.

Training sessions concerning facility operations and emergency procedures to be followed in case of accident, fire, explosion or other emergencies shall be conducted annually for all employees working at the facility. A copy of the training program will be filed with the Office of Environmental Services, Permits Division. River Birch Landfill meets the requirements of La.R.S. 30:2157.

**521.H.1.g.**

**g. Provisions for controlling vectors, dust, litter, and odors.**

**Response:**

Due to the length of this response, it is contained in the Operational Plan found in Volume II, Appendix A.



**521.H.2.a.**

**2. The following information on operational plans is required for Type I and II facilities:**

**a. A comprehensive operational plan describing the total operation, including (but not limited to) inspection of incoming waste to ensure that only permitted wastes are accepted (Type II landfills must provide a plan for random inspection of incoming waste loads to ensure that hazardous wastes or regulated PCB wastes are not disposed of at the facility.); traffic control; support facilities; equipment operation; personnel involvement; and day-to-day activities. A quality-assurance/quality-control [QA/QC] plan shall be provided for facilities receiving industrial waste; domestic-sewage sludge; incinerator ash; friable asbestos; nonhazardous petroleum- contaminated media; and debris generated from underground storage tanks IUSTJ, corrective action, or other special wastes as determined by the administrative authority. The QA/QC plan shall include (but shall not be limited to) the necessary methodologies; analytical personnel; preacceptance and delivery restrictions; and appropriate responsibilities of the generator, transporter, processor, and disposer, The QA/QC plan shall ensure that only permitted, nonhazardous wastes are accepted;**

**Response:**

The Operation Plan is included in Volume II, Appendix A.

**521.H.2.b.**

**b. Salvaging procedures and control, if applicable; and**

**Response:**

Not applicable. There will be no salvaging operations at the site.

**521.H.2.c.**

**c. Scavenging control.**

Response:

Scavenging will be prevented through controlled access to the facility by a perimeter fence and locked or monitored gates.

**521.H.3.**

**3. The following information on operational plans is required for Type I and II landfarms:**

**Response:**

Not applicable. This permit application does not include Type I or II landfarms.

**521.H.4.**

**4. The following information on operational plans is required for Type I-A and II-A incinerator waste-handling facilities and refuse-derived energy facilities:**

Response:

Not applicable. This permit application does not include Type I-A or II-A incinerators or refuse-derived energy facilities.

**521.H.5.**

**5. The following information on operational plans is required for Type I-A and II-A refuse-derived fuel facilities and Type III separation and composting facilities:**

**Response:**

Not applicable. This permit application does not include Type I-A or II-A refuse-derived fuel facilities or Type III separation or composting facilities.

**521.H.6.**

**6. The operational plans for Type I-A and II-A refuse-derived fuel facilities and Type III separation and composting facilities must include a description of marketing procedures and control.**

**Response:**

Not applicable. This permit application does not include Type I-A or II-A refuse-derived fuel facilities or Type III separation or composting facilities.

**521.H.7.**

**7. The operational plans for Type I and II facilities receiving waste with a potential to produce gases must include a comprehensive air monitoring plan.**

Response:

The air monitoring plan is included in the Operational Plan, included in Volume II, Appendix A.4.3.



**521.I.1.a.**

**I. Implementation Plan.** Standards governing implementation plans are contained in LAC 33:VII.709.D (Type I and II facilities), LAC 33:VII.717.H (Type I-A and II-A facilities), and LAC 33:VII.719.E (Type III facilities).

**1. The implementation plans for all facilities must include the following:**

**a. A construction schedule for existing facilities which shall include beginning and ending time frames and time-frames for the installation of all major features such as monitoring wells and liners. (Time-frames must be specified in days, with day one being the date of standard permit issuance); and**

**Response:**

An implementation schedule is included as Figure 45 found in Volume IV. This schedule shows major site development features including monitor well installation, site preparation, cell construction, filling of the cell, and closure. The schedule is presented in both days and months.

It is anticipated that the landfill will be in operation for approximately 50 years until the year 2050 with the leachate treatment pond remaining open for 30 years after the landfill is closed.

**521.I.1.b.**

**b. Details on phased implementation if any proposed facility is to be constructed in phases.**

**Response:**

The site began operation in 1999 and opened with cells 1 thru 3 along with the gate house, access road and monitoring well 1 thru 7 being complete.

During the first year of operation 1999-2000 cells 4 thru 12 were construction along with the leachate treatment pond.

During 2000-2001 even cells numbers 14 thru 20 were constructed and the remaining monitoring well system, wells 8 thru 15 were installed. During 2001-2002 odd cell numbers 13 thru 21 were constructed.

It is anticipated that construction will continue in phases with approximately 10 to 20 acres of cells being constructed at any one time. The anticipated construction activities and related dates are as follows:

DESCRIPTION OF IMPROVEMENTS	CONSTRUCTION SCHEDULE
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Cells 22, 24, 26, 28 & 30 .....	2002 - 2003
Cells 23, 25, 27, 29 & 31 .....	2003 - 2004
New Leachate Treatment Pond & West Interior Ditch .....	2006 - 2007
Permitting and Construction of of Injection Wells .....	2006 - 2007
Monitoring Wells 16 - 27 .....	2007 - 2008
Cells 32 - 33 .....	2006 - 2008
Cells 34 - 35 .....	2008 - 2009
Cells 36 - 38 .....	2009 - 2011
Cells 38 - 43 .....	2001 - 2013
Convert Original Treatment Pond To Landfill & Construct East Interior Ditch .....	2018 - 2020
Cells 44 - 47 .....	2019 - 2020
Cells 48 - 51 .....	2025 - 2027
Cells 52 - 55 .....	2032 - 2034
Cells 56 - 59 .....	2037 - 2039
Cells 60 - 63 .....	2041 - 2043
Final Closure Landfill .....	2050 - 2052
Closure Leachate Treatment Pond .....	2082 - 2094

**521.I.2.**

**2. The implementation plans for Type I and II facilities must include a plan for closing and upgrading existing operating areas if the application is for expansion of a facility or construction of a replacement facility.**

**Response:**

The implementation plans and approximate dates for expansion of the existing landfill, closure of cells that have reached capacity, closure of the original leachate treatment pond, construction of deep well injection system with associated above-ground treatment facilities, and installation of new monitoring wells for the western expansion are included in the response to LAC 33:VII.521.I.1.b.

**521.J.1.a.**

**J. Facility Closure.** Standards governing facility closure are contained in LAC 33:VII.711.E (Type I and II landfills), LAC 33:VII.713.E (Type I and II surface impoundments), LAC 33:VII.715.E (Type I and II landfarms), LAC 33:VII.717.I (Type I-A and II-A facilities), LAC 33:VII.721.D (construction and demolition debris and woodwaste landfills), LAC 33:VII.723.D (Type III composting facilities), and LAC 33:VII.725.D (Type III separation facilities)

**1. The closure plan for all facilities must include the following:**

**a . The date of final closure;**

**Response:**

A closure plan for the site is included in Volume II, Appendix E. Closure of the entire landfill site is not anticipated until 2050 with closure of the leachate treatment pond not anticipated until 2080.

**521.J.1.b.**

**b. The method to be used and steps necessary for closing the facility; and**

**Response:**

All landfill cells will be closed in-place. The closure plan is included in Volume II, Appendix E.

The leachate treatment pond will be closed after it is no longer needed. This will probably be 30 years after final closure of the landfill after the post-closure period is over. To prevent a second 30 year post-closure period from having to be followed for the leachate pond, a clean closure will be followed for the pond.

Once the pond is no longer needed the last water in the pond will be tested to assure it meets discharge limits and the water will be discharged. Any liquids and sludge remaining in the pond, after the discharge is complete, will be removed and disposed of at a facility capable of receiving such waste. Once all material has been removed, the concrete pad, protective soil layer and the 60-mil HDPE liner will be removed and disposed of at an approved site. The clay liner remaining will be tested for the presence of contamination. To assure that the proper analysis is conducted, a list of waste which may have entered the pond will be used to select the proper indicator parameters. This list of waste and parameters will be submitted to the administrative authority in the closure plan prior to beginning the closure.

The closure plan will also include a diagram showing proposed sample locations, a description of the sampling and testing methods, a quality assurance/quality control program for sampling. Comparison of samples taken from the bottom of the pond to samples taken for the sides of the pond near the top of the levee, the identity of the facility to receive the excavated waste and liner. All analysis taken will be sent to the administrative authority. If analysis should indicate that any solid waste is present in the subsurface soils below the pond, this material will be removed and disposed of in the same manner as the sludge, and more tests will be taken until indicators show no waste present. Once all indicators show no waste is present, the administrative authority will be requested to perform a closure inspection. Once the pond is backfilled to the contours indicated on Figure 35 the administrative authority will again be requested to make a final inspection.

If it is not possible to remove all waste, an application will be submitted for a revised closure plan under RECAP Standards.

**521.J.1.c.**

**c. The estimated cost of closure of the facility, based on the cost of hiring a third party to close the facility at the point in the facility's operating life when the extent and manner of its operation would make closure the most expensive.**

**Response:**

The closure – post closure plan is found in Volume II, Appendix E. Included in this plan is the closure cost estimates for the landfill, the post closure cost estimates for the landfill, and the closure cost estimate for clean closure of the leachate treatment pond.

**521.J.2.a.**

**2. The closure plan for Type I and II landfills and surface impoundments must include:**

**a. A description of the final cover and the methods and procedures used to install the cover;**

**Response:**

Configuration, grade, and construction details are shown in Figures 35 through 42. The conceptual locations of the landfill gas collection and treatment system pipes are shown in Figures J1 and J2 found in Volume IV. A summary report describing Phase I of the Construction of the Landfill Gas Collection System is found in Appendix F of Volume II.

**521.J.2.b.**

**b. An estimate of the largest area of the facility ever requiring a final cover at any time during the active life;**

**Response:**

The estimated largest area requiring a final cover at any time during the active life of the facility is 140 acres.



**521.J.2.c.**

**c. An estimate of the maximum inventory of solid waste ever on-site over the active life of the facility; and**

**Response:**

The estimated maximum inventory of solid waste over the active life of the facility is the total design capacity of existing and proposed landfill facilities. The estimated capacity of the facility is 62,000,000 cubic yards of waste volume or 50,000,000 tons of waste volume based on a compaction rate of 1600 lbs. per cubic yard of air space.

**521.J.2.d.**

**d. A schedule for completing all activities necessary for closure.**

Response:

A schedule for all landfill activities including landfill closure, maintenance of post-closure landfill and final closure of the leachate system, gas system and leachate treatment pond is found on Figure 45.

**521.J.3.a.**

**3. The closure plan for all Type I and II facilities and Type III woodwaste and construction/demolition debris facilities shall include the following:**

**a. The sequence of final closure of each unit of the facility, as applicable;**

**Response:**

The sequence of final closure for each unit at the site is presented in Volume II, Appendix E.

**521.J.3.b.**

**a. Drawing showing final contours of the facility; and**

**Response:**

Final contours of the facility at closure are shown in Figure 35.

**521.J.3.c.**

**c. A copy of the document that will be filed upon closure of the facility with the official parish recordkeeper indicating the location and use of the property for a solid waste disposal, unless the closure plan specifies a clean closure.**

**Response:**

A copy of the document that will be filed with the Jefferson Parish Clerk of Court upon closure of the facility is included in Volume II, Attachment 13. Upon submitting this document to the Clerk of Court, River Birch will provide the regulatory authority a true copy of this document, certified by the Jefferson Parish Clerk of Court. A certified copy of this document will be provided to the LDEQ Permits Division.

**521.K.1.a.**

**K. Facility Post-closure.** Standards governing post-closure requirements are contained in LAC 33:VII.711.F (Type I and II landfills), LAC 33:VII.713.F (Type I and II surface impoundments), LAC 33:VII.715.F (Type I and II landfarms), and LAC 33:VII.721.E (Type III construction and demolition debris and woodwaste landfills).

**1. The post-closure plan for all facilities must include the following:**

**a. Specification of the long-term use of the facility after closure, as anticipated; and**

**Response:**

After closure, there is no anticipated long-term use of the site except post-closure maintenance and monitoring.

**521.K.1.b.**

**b. The cost of conducting post-closure of the facility, based on the estimated cost of hiring a third party to conduct post closure activities in accordance with the closure plan.**

Response:

Applicable costs, based on performance by a 3<sup>rd</sup> party, have been provided in Vol II Appendix E.

**521.K.2.a.**

**2. The post-closure plan for Type I and II facilities must include the following:**

**a. The method for conducting post-closure activities, including a description of the monitoring and maintenance activities and the frequency at which they will be performed;**

**Response:**

Post-closure maintenance and monitoring activities are described in the closure plan included in Volume II, Appendix E.



**521.K.2.b.**

**b. The method for abandonment of monitoring systems, leachate collection systems, gas-collection systems, etc.;**

**Response:**

The method for the abandonment of groundwater monitoring wells is described in Appendix B-Groundwater Monitoring Plan, found in Volume II. Methods for the abandonment of leachate collection systems and gas collection systems are described in the post-closure plan in Volume II, Appendix E.

**521.K.2.c.**

**b. Measures planned to ensure public safety, including access control and gas control; and**

**Response:**

Measures to ensure public safety, control access to the site, and gas control are discussed in the Closure and Post Closure Plan found in Volume II, Appendix E. Public access to the site will be controlled with fences. The gas control system will be maintained as long as necessary.

**521.K.2.d.**

**d. A description of the planned uses of the facility during the post-closure period.**

**Response:**

Other than post-closure maintenance and monitoring activities, there are no planned uses for the site during the post-closure period.

**521.L.1.**

**L. Financial Responsibility.** Standards governing financial responsibility are contained in LAC 33:VII.727. A section documenting financial responsibility according to LAC 33:VII.727 which contains the following information, must be included for all facilities:

- 1. The name and address of the person who currently owns the and the name and address of the person who will own the land if the standard permit is granted (if different from the permit holder, provide a copy of the lease or document which evidences the permit holder's authority to occupy the property); or**

**Response:**

The proposed site is owned and will be operated by: River Birch, Inc., Post Office Box 1938, Gretna, Louisiana 70054. A legal description of ownership for the River Birch Landfill property is included in Attachment 1 of the Permit Renewal Application.

**521.L.2.**

**2. The name of the agency or other public body that is requesting the standard permit; or, if the agency is a public corporation, its published annual report; or, if otherwise, the names of the principal owners, stockholders, general partners, or officers;**

Response:

Not applicable. River Birch, Inc. is not a public body or agency.

**521.L.3.**

**3. Evidence of liability coverage, including:**

- a. Personal injury, employees, and the public (coverage, carrier, and any exclusions or limitations);**
- b. Property damage (coverage and carrier);**
- c. Environmental risks;**

**Response:**

A current certificate of insurance has been provided in Attachment 13. The insurance will be maintained as required by LAC 33:VII.727.A.1.

**521.L.4.**

**4. Evidence of a financial assurance mechanism for closure and/or post-closure care and corrective action for known releases when needed.**

**Response:**

Financial assurance for closure and post-closure care will be provided by either an irrevocable standby letter of credit or a trust fund. Documentation of financial assurance for closure and post-closure care will be submitted to the administrative authority prior to commencing operation of the site. Proof of financial assurance is included in the Closure-Post Closure Plan provided in Volume II, Appendix E.

#### **521.M. Special Requirements**

**The administrative authority may require additional information for special processes or systems and for supplementary environmental analysis.**

**Response:**

**River Birch acknowledges that additional information may be required by the administrative authority. Additional information will be provided upon notification by the administrative authority.**



**523. Part III: Additional Supplementary Information**

**The following supplementary information is required for all solid waste processing and disposal facilities. All responses and exhibits must be identified in the following sequence to facilitate the evaluation:**

A complete Response to Regulation LAC 33:VII.523 was made as part of Modification No. 7 to the Solid Waste Permit Application. A memorandum outlining changes which are being made as part of this Permit Renewal Application is included as Part III-LAC 33:VII.523: Additional Supplementary Information. In addition, a *Supplemental Response To The "IT Decision" Questions* has been included in Part III-LAC 33:VII.523: Additional Supplementary Information.

# **VOLUME I**

## **SECTION III**

**Response to LAC 33:VII-Regulations**

### **PART III**

**LAC 33:VII.523**

**Additional Supplementary Information**

**Memorandum Outlining Changes to Permit  
Which Effect LAC 33:VII.523  
(June, 2005)**

Pursuant to LAC 33:VII.511.D.2.a, River Birch Landfill, Inc. (herein "RBL") is required to submit an application for renewal of its Solid Waste Permit No. D-051-6741/P-0321 at least 455 days prior to its expiration. As agreed by LDEQ, RBL is submitting as its application for renewal, the application and by reference "Response to the 'IT Decision' Questions and LAC 33:VII.523 ("IT Analysis") that were submitted in conjunction with River Birch Landfill Inc.'s Application for Modification of Title V (Part 70) Air Permit and Application for Major Modification #7 of Solid Waste Permit No. D-051-6741/P-0321" (the "Modification Application") on or about September 19, 2003. Modification #7 was granted on or about January 7, 2004. This memorandum provides a summary of updates or changes affecting the RBL facility since the submittal of the Modification Application.

The primary reason for the Modification #7 expansion was to allow RBL to accommodate the demand for additional landfill capacity, which has been established by an assessment of the specific needs of its current customers, as well as a more general analysis of the projected needs for disposal capacity in RBL's service area. This anticipated growth potential for additional Type I/II waste disposal capacity within the RBL service area and the State as a whole was reflected by a Zoning Study conducted on behalf of Jefferson Parish, which incorporated a Waste Forecast prepared by the University of New Orleans. RBL's expansion plans, which included an increase in volume from approximately 16 million tons to approximately 50 million tons, an increase in facility life from 25 to 50 years, construction of a new 28-acre leachate treatment pond, and expansion of the monitoring well system from 15 wells to 24 permanent wells, are part of this overall development plan designed to improve the efficiency, economics and environmental protections of solid waste disposal practices in the Greater New Orleans area. As exemplified throughout this updated IT Analysis, those improvements have largely been achieved by RBL since the granting of Modification #7, or are well on their way to being achieved. The renewal of the RBL permit for another ten years would only serve to allow the consequent benefits flowing from these improvements to the surrounding environment and community to continue and to reach their maximum potential.

Updated information and changes at RBL since the submittal of the IT Analysis on September 19, 2003 are as follows:

1. On October 28, 2004, RBL received authorization from LDEQ Air Permits to construct and operate a gas collection and control system ("GCCS") to collect landfill gas from Phase I and Phase II (closed cells) of the landfill. The variance indicates that the GCCS will collect the gas and either route it to a flare or sell it off-site as fuel. This GCCS has been operational since February 28, 2005.<sup>1</sup> The GCCS is considered Maximum Available Control Technology ("MACT") and will have significant pollution control benefits by vastly reducing emissions of landfill gas. Since the installation of the GCCS on February 28, 2005, at least 75% of the LFG has been recovered and routed to a flare where the VOCs are destroyed to 98% or greater efficiency. The GCCS will be modified over the life of the landfill so that it will aggressively follow the horizontal and vertical expansion of the landfill.

Currently, all landfill gas is destroyed at the flare with a 98% destruction and removal efficiency. However, as discussed below, RBL intends to implement a landfill gas-to-energy ("LFGTE") project such that its landfill gas is beneficially used by a downstream end user. This potential LFGTE project would virtually eliminate the majority of air emissions from the expanded RBL facility,<sup>2</sup> since landfill gas will only be sent to the flare in emergency situations or when delivery to the end user is interrupted for whatever reason.

At the time of the submittal of the September 19, 2003 IT Analysis, RBL was in the very preliminary stages of exploring the feasibility of a LFGTE project. Much progress has been made on that front since that time. RBL is further along in negotiations with a potential end user and has engaged consultants to explore and establish design and treatment criteria based on the demands and requirements of this end user. It is important to note, however, that EPA is still in the process of updating NSPS Subpart WWW to incorporate specific definitions and parameters for "treated" and "untreated" landfill gas, as well as the requirements for, and consequences of, the sale or off-site transport of both treated and untreated landfill gas. A proposed rule was published on May 23, 2002, but EPA received so many comments on perceived deficiencies in the proposed rule that it has taken a second look at the proposal. Communication with the EPA contact person in March 2005 revealed that EPA hoped to publish a supplemental proposed rulemaking by the summer of 2005. Thus, while RBL is proceeding with negotiations for a landfill gas-to-energy project, final development of a LFGTE system would be premature at this time, given the undecided state of the level

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<sup>1</sup> On March 10, 2005, RBL received authorization to construct and operate a GCCS for Phase 3 and Phase 4 and tie into the newly constructed flare.

<sup>2</sup> As indicated by RBL's September 19, 2003 IT Analysis, the emission reductions benefits associated with the combustion of the hydrocarbons displaced by such a project would be equivalent to any one of the following annual environmental benefits: taking 53,620 cars off Louisiana's roads; planting 73,118 acres of forest; or preventing the use of 566,688 barrels of oil.

of gas treatment which EPA will require. RBL notes that the LFGTE system currently being discussed meets, if not exceeds, the standards proposed on May 23, 2002.

The LFGTE project should be favorably viewed by LDEQ as an environmentally beneficial project. In the September 19, 2003 IT Analysis, RBL cited recent increases in natural gas prices and predicted shortfalls in natural gas supplies as an impetus to LFGTE development. Considering the reality of what has occurred since September 2003, RBL's estimation of a need for, and potential benefits from a LFGTE project proved to be (conservatively) correct. The granting of RBL's renewal request will ensure that any potential for, and corresponding benefits from, a LFGTE project will be achieved. The assurance of a long-term contract with an end user for the landfill gas is an incentive for a landfill such as RBL to make the large capital investment to institute a LFGTE project, which, given the unstable nature of natural gas supplies and prices, will ensure a long-term gas supply to the community and the corresponding benefits therefrom, both economic and environmental.

2. RBL has implemented all odor control measures required by Major Modification No. 7. RBL is exempt from LDEQ's odor control regulations in Chapter 29 because its operations are conducted for purposes of public health and welfare for which there is no suitable substitute, and RBL employs best modern practices to suppress odors to the maximum extent possible. RBL has taken additional steps to solidify its commitment to minimize odors associated with disposal activities. These include the following:

- Maintenance of a 0.5 acre working face to the extent practical
- Application of daily soil cover over the waste
- Installation of a HydraLogic Perimeter Misting System
- Odor monitoring using a Nasal Ranger Olfactometer
- A stringent waste acceptance procedure which includes refusal to accept certain odorous sludges
- Implementation of the GCCS and flaring of captured gas
- Surface monitoring as required by the New Source Performance Standards, Subpart WWW (beginning the second quarter of 2005)

Furthermore, on June 7, 2004, RBL obtained a variance to install a temporary diesel generator to test a potential odor control method in the area of the working face of the landfill. RBL is now in the process of installing an additional high-pressure misting system closer to all working areas and locations where gas collection systems have not yet been installed. Likewise, the potential LFGTE project would further reduce any potential odor problems associated with landfill gas. Finally, RBL has continued interfacing with the Waggaman community to address their concerns.

All in all, RBL's aggressive, multifaceted approach to minimizing landfill odors is designed as a long-term solution to this problem and is being coordinated with similar

efforts by the Jefferson Parish Landfill. These factors point in favor of renewal of this permit.

3. RBL received a variance from LDEQ Water Permits for the chloride limits in its LPDES permit on November 19, 2003. This variance was necessitated by the naturally occurring high concentrations of chlorides in both groundwater and receiving waters (Saul's Canal) believed to be associated with the historic presence of brackish marsh in the area.<sup>3</sup> A condition of the variance is that RBL undertake more detailed sampling to establish background levels. The findings from this sampling will benefit the environment by giving LDEQ more information on background chloride levels in the surrounding area. In addition, RBL is installing permanent, rather than temporary, monitoring wells on the perimeter of the facility.

4. RBL has addressed all outstanding safety risk issues. Specifically, RBL has instituted a Bird Hazard Mitigation Plan to allay any concerns by the FAA about bird striking. Furthermore, RBL's amended Startup, Shutdown & Malfunction Plan ("SSMP"), which incorporates the operation of the GCCS, has been in place since February 28, 2005.

5. In terms of alternative technologies for waste treatment and disposal, with the exception of LFGTE projects, discussed above, the economics of energy recovery from solid waste combustion continue to restrict its status as a viable alternative to land filling. There are likewise a number of adverse environmental effects, such as dioxin and ash production, which weight against combustion/incineration as a viable option. Bioreactor technology presents the same dilemma and other uncertainties.<sup>4</sup> In any event, the GPS program currently existing at RBL has allowed it to reach the compaction rates achieved at facilities utilizing bioreactor technology. Other alternatives, such as land application of sewage sludge as cover or otherwise, have been met with vehement public opposition, as exemplified most recently in conjunction with the Jefferson Parish Landfill. Although these may still be viable alternatives, they require further exploration.

6. In regard to resource recovery and/or waste segregation, the primary municipalities in the RBL service area have curbside recycling, so, for the most part, waste streams going to RBL have already been minimized. Additionally, there is a strategic alliance between RBL and the Hwy-90, L.L.C. Construction and Demolition Debris landfill, which received its permit on November 5, 2004. The two facilities have a synergistic effect upon one another and the surrounding area by diverting Type III waste taking up valuable air space in the RBL Type I/II facility to a Type III facility. Likewise, RBL's customers would have an economic incentive, in the form of reduced tipping fees, to segregate their Type III waste.

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<sup>3</sup> The requested limit of 850 ppm was lower than the sample results obtained from an upstream location, so the increase should have no significant adverse effect on the environment.

<sup>4</sup> Also noteworthy is the fact that LDEQ's regulations still do not address bioreactor technology.

RBL believes that a guaranteed, long term source of Type III waste disposal capacity is necessary to preserve, to the maximum extent possible, the environmentally sound Type I and II waste disposal capacity RBL provides. This joint relationship will also enhance resource recovery efforts by giving customers an economic incentive to segregate their waste.

7. Another consideration, related to location characteristics, is that RBL is not located in a parish designated as being in "non-attainment" with air quality standards, nor is it in a parish designated as an "adjoining parish" under LDEQ Air Quality Regulations. This is a significant consideration, given the recent "severe" non-attainment designation of the 5-parish area surrounding Baton Rouge, and the fact that four parishes in the northern portion of RBL's service area (St. Martin, Assumption, St. James and St. John the Baptist) are designated as "adjoining parishes" where there is a very real concern about the effect of additional pollutants. Since landfills do emit some ozone precursors such as VOCs, although in very low quantities, which could adversely impact the Baton Rouge area's ability to achieve attainment, it is critical that future capacity needs from the RBL service area be satisfied in the southern end of the state so as not to further adversely impact the state's effort to achieve compliance with air quality standards.

8. One of the issues assessed in the September 19, 2003 IT Analysis was the increased demand for capacity to dispose of oil and gas exploration and production waste ("E&P waste") in Type I landfills. LDEQ has issued an advance notice of rulemaking to allow such and is currently exploring the parameters for such disposal in Type I landfills. This will likewise increase the demand for disposal capacity, which RBL can provide.

9. The State has been hit by at least two devastating tropical storms since September 19, 2003. There have also been a few episodes of very destructive tornadic activity in the RBL service area, all of which resulted in an increased volume of debris for disposal. Furthermore, RBL has received requests from surrounding states to accept hurricane debris for disposal, although RBL did not accept this waste. Given the forecast for the upcoming hurricane season, there is a high likelihood that one or more major hurricanes will hit the surrounding area, resulting in an increased need for disposal capacity.

### CONCLUSION

In summary, RBL is uniquely situated in an area 1) *specifically zoned for solid waste related activities*, 2) adjacent to another landfill which accepts only parish-generated waste, and 3) near a Type III Construction and Demolition Debris landfill to which Type III waste can be diverted. As recognized by the Zoning Study conducted on behalf of Jefferson Parish, the area encompassing the RBL, Hwy. 90, and Jefferson Parish landfills, with its favorable soil conditions and transportation infrastructure, is sufficient to support regional waste disposal needs in the New Orleans metropolitan area for the next 25-30 years. There have been many dramatic changes and improvements at or affecting the RBL facility immediately prior to, as a result of and since Modification No. 7 was granted on January 7, 2004. These changes and improvement, for the most part, were or are being made to accommodate the proven demand and anticipated growth

potential for additional Type I/II waste disposal capacity within the RBL service area and the State as a whole, as partially reflected by the Zoning Study, but also by many other factors, such as the anticipated allowance of E&P waste disposal in Type I solid waste landfills.

Although the improvements and changes discussed herein have already resulted in some immediate and short-term economic and environmental benefits, the renewal of RBL's solid waste permit for another ten years would allow these benefits to reach their maximum potential. For example, the guarantee of a long-term supply of landfill gas gives a potential end user some assurance and stability and provides an economic incentive for a landfill such as RBL to make the tremendous capital investment to construct and operate a LFGTE system. And, as discussed above, a LFGTE system is a "win-win" situation for everyone because it results in decreased reliance on our precious natural gas reserves and further reduces emissions of methane and other air pollutants to the environment. However, these particular potential benefits will never come to fruition unless RBL's solid waste permit is renewed.



**SUPPLEMENTAL RESPONSE TO THE  
“IT DECISION” QUESTIONS**

**First Amendment to Supplemental  
Response to the "IT Decision" Questions  
(and LAC 33:VII.523)  
Submitted in Conjunction with River Birch, Inc.'s  
Application for Renewal of  
Solid Waste Permit P-0321 for River Birch Landfill**

**INTRODUCTION**

River Birch, Inc. owns and operates River Birch Landfill ("River Birch"). River Birch is a fully permitted Type I and Type II solid waste landfill located on Highway 90 in Jefferson Parish, Louisiana.

River Birch received its initial permit to operate on or about May 8, 1997 (Permit No. P-0321). On January 7, 2004, the Louisiana Department of Environmental Quality ("LDEQ") approved Major Modification No. 7 to River Birch's solid waste permit. LDEQ, in granting Major Modification No. 7, allowed, among other things, a horizontal expansion of the landfill to its currently permitted size of 399 acres, a vertical expansion to 197 feet, and the expansion of the monitoring well system to twenty-four permanent wells. An application for renewal of its solid waste permit, which is the subject of the current proceeding, was timely filed in June, 2005.

However, since granting Major Modification No. 7 and the submittal of the current renewal application, certain events require that the IT Response submitted with the renewal application be updated. This Supplemental Response will document and explain these changed conditions. Two basic events or occurrences will be addressed in this Supplemental Response: 1) the events or occurrences brought about by the hurricanes of 2005; and 2) the approval of River Birch's application for the installation and operation of a Class I non-hazardous injection well.

LDEQ submitted Notices of Deficiency ("NOD") to River Birch, to which River Birch responded in June, 2006. River Birch's NOD Response incorporated the above-mentioned changes into the renewal application. Thereafter, a Supplemental Response to IT Questions was presented to LDEQ to supplement the IT Responses previously provided with the renewal application. However, several events require that the Supplemental Response to IT Questions be amended. First, the increase in amount of waste to be received in a week has been reduced to a volume that mirrors the planned growth (and subsequent disposal rates) of the area over the next ten years. Second, the plot of land on which the injection wells are located has been removed from the footprint of the solid waste landfill. This submittal will provide the necessary amendment to reflect these changes. After several preliminary considerations are noted, the changes will be discussed in turn.

**PRELIMINARY CONSIDERATIONS**

The "IT Questions" are made an integral part of the solid waste permit application process through LAC 33:VII.523, which requires that permit applications contain

responses to the specific questions in order to facilitate the evaluation of the application. The "IT Questions" themselves, which are embodied in Section 523, evolve from the Louisiana Constitution of 1974, Art. IX, Sec. 1, and the principles enunciated by the Louisiana Supreme Court in *Save Ourselves, Inc. v. Louisiana Environmental Control Commission*, 452 So. 2d 1152 (La. 1984), as refined by the Court of Appeals, First Circuit, in *Blackett v. Louisiana Department of Environmental Quality*, 506 So. 2d 749 (La. App. 1 Cir. 1987) and *In re: Rubicon*, 95-0108 (La. App. 1 Cir. 2/14/96), 670 So. 2d 475, rehearing denied, 3/29/96.

The secretary of the Louisiana Department of Environmental Quality ("LDEQ") has been designated as the primary public trustee of the environment. He must consider and follow the will and intent of the Louisiana Constitution of 1974 in making decisions regarding the environment. La. R.S. 30:2014(A)(4). The secretary fulfills his duty as the primary public trustee, and thereby justifies the discretion afforded him in permit decisions, through the consideration and detailing of three broad issues:

- 1) Have the potential and real adverse environmental effects of the project been avoided to the maximum extent possible;
- 2) Does a cost benefit analysis of the environmental impact costs balanced against the social and economic costs demonstrate that the latter outweighs the former; and
- 3) Are there alternative projects, alternative sites, or mitigating measures which offer more protection to the environment than the proposed project without unduly curtailing non-environmental benefits.

*Rubicon*, 670 So. 2d at p. 483; see also *In re: American Waste and Pollution Control Co.*, 93-3163 (La. 9/15/94) 642 So. 2d 1258, 1266. <sup>1</sup> This submittal will address these three inquiries.

River Birch has submitted several in-depth responses to the IT Questions as part of its initial solid waste and air quality permit applications and subsequent solid waste and air quality permit modification applications, especially the application for Major Modification No. 7. The considerations set forth in those responses are valid and relevant to the present permit renewal application. Additionally, LDEQ's prior decisions, approving the initial solid waste and air quality permit applications and subsequent solid waste and air quality permit modification applications, are equally valid and relevant. Therefore, all of River Birch's prior responses to the IT Questions (including the IT Response for Major Modification No. 7 and the response attached to the renewal application) and any LDEQ decisions approving the applications in which those responses were contained, are incorporated herein and made a part hereof by reference.

LDEQ has also recently provided approvals for River Birch's operations. On October 2, 2006, LDEQ modified River Birch's air quality Part 70 Operating Permit to include a landfill gas collection and control system and the previously approved expansion from 238 acres to 399 acres. The landfill gas collection and control system

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<sup>1</sup> Section 523 separates Issue 3 into three distinct inquiries.

will obviously minimize emissions to the environment and assist in odor reduction. LDEQ's approval followed two public comment periods and a public hearing.

LDEQ also recently approved changes at the landfill made necessary by the hurricane. On July 20, 2006, LDEQ approved an "increase in hours of operation: and increase in volume of waste." See Letter, dated July 20, 2006, from Dr. Chuck Carr Brown, LDEQ, to A. J. Ward, River Birch. LDEQ had requested in November, 2005 that River Birch supply information about changes to the landfill's operations made necessary by the hurricane. LDEQ's approval in July, 2006, almost a year after the hurricane, signifies that the changes at the landfill made necessary by the hurricane continue to form an integral component of clean-up and re-building efforts in the area. As such, they should be continued beyond any declared emergency and made a permanent part of River Birch's permit.

River Birch is an existing facility seeking a renewal of its previously approved permit. As such, the rigorous siting analysis usually submitted as part of an application for a new or expanded facility is not required. Further, River Birch conducted extensive siting studies and alternative sites analyses as part of prior permit applications (both for the initial permit and subsequent modifications) that were fully reviewed by LDEQ, approved by LDEQ, and either upheld by the courts on appeal or are final and unappealable.

Finally, River Birch possesses all requisite local authority and approval for its operations. River Birch is located within a specially zoned area of Jefferson Parish which is dedicated solely to solid waste disposal. Jefferson Parish specifically designated the area in which River Birch is located as the only area in the parish in which solid waste landfills may be located.

## **ANALYSIS**

### **Part I: Changes Since the Hurricane**

A prophetic statement is contained in the IT Response submitted with the original renewal application, which was submitted several months before Hurricane Katrina. See Volume I, Section III. It was stated therein that: "[g]iven the forecast for the upcoming hurricane season, there is a high likelihood that one or more major hurricanes will hit the surrounding area, resulting in an increased need for disposal capacity." The statement turned out to be amazingly accurate as the New Orleans area suffered tremendously in the last hurricane season. The area is still in need of permitted disposal capacity. See e.g., statements by Chuck Carr Brown, July 14, 2006, regarding the need for capacity to insure prompt and efficient disposal of wastes.

River Birch supplied much needed landfill capacity in the months following the emergency created by Hurricane Katrina. Although it is, and has been, physically able to receive and properly dispose of the increased volume of waste at an increased rate of disposal, this permit renewal ensures that River Birch's permit is flexible enough at this

time and in the future to fully accommodate all operational exigencies resulting from future disasters or contingencies.

The present permit renewal application includes certain changes caused by Hurricane Katrina. Several aspects of River Birch's operation have changed as a result of Hurricane Katrina.<sup>2</sup> In order to more efficiently accommodate anticipated volume, the changes caused and/or made necessary by the hurricane generally comprise two main operational areas: hours of operation and volume of waste. Each will be described in turn.

Changes in the hours of operation are a direct result of the large demands placed on the facility by the tremendous volume of solid waste. Prior to the hurricane, River Birch was normally open approximately sixteen hours a day, Monday through Saturday. It reserved flexibility to open on Sunday for special occasions, such as to accommodate storm damage disposal. The renewal application recognizes the need for continued flexibility. River Birch's normal hours and days of operation will be 4 a.m. to 8 p.m. (sixteen hours), Monday through Saturday, extending into Sunday for special occasions such as storm damage disposal. However, River Birch reserves the right to stay open twenty-four hours, seven days a week to accommodate all exigencies that may arise. When circumstances mandate that River Birch remain open beyond the normal hours noted above, it will notify LDEQ.

For purposes of operational flexibility, River Birch initially requested a total volume amount of 91,000 tons per week (TPW). However, River Birch has reassessed that request and has determined that an increase of approximately eight to ten per cent per year over the next ten years, culminating in a maximum of 50,000 TPW, will be sufficient to provide operational flexibility and accommodate the growth in the area over the next ten years. The incremental increases (i.e., eight to ten per cent per year) will track the estimated population growth and anticipated increase in waste volumes. Additionally, the volume of some incoming waste loads may be calculated rather than weighed on a scale as is the current method.

The impacts caused by the hurricane and which are the subject of this renewal request do not impact the environment in any appreciable manner. For example, the hurricane-induced impacts and this renewal do not increase the vertical or horizontal

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<sup>2</sup> A review of the renewal application may suggest that River Birch is requesting an increase in its permitted service area. Such is not the case. River Birch intends to maintain its existing service area.

footprint of the landfill or change the types of waste allowed to be disposed of at River Birch (a Type I and Type II facility). Rather, these changes are mainly operational and/or procedural in nature, required to more efficiently accommodate the increased rate of disposal and volume of waste being disposed of at River Birch at the present time and as demolition and construction begins in earnest in Jefferson and Orleans Parishes.

**1) Have the potential and real adverse environmental effects of the project been avoided to the maximum extent possible?**

Yes, any adverse impacts of these operational-type changes have been minimized to the maximum extent possible. As stated above, the changes to the landfill mainly involve the method and manner of operation and do not impact the environment. River Birch already has in place environmental safeguards (such as a Stormwater Pollution Prevention Plan and permits for water quality discharges and air emissions) that will provide maximum protection for any changes to landfill operations. However, several potential environmental impacts will be reviewed.

The impact of the changes noted above (increases in the hours of operation and an increased volume of waste) will be reviewed in the context of the following areas: surface water, groundwater, air quality, aesthetics, and safety. Each will be addressed in turn.

**Surface Water**

The changes are not anticipated to impact the quality of the surface water. First, the changes are not of a type that add new or different pollutants to the landfill. River Birch will remain a non-hazardous landfill that accepts only residential, commercial, and industrial wastes. Second, River Birch's water quality discharge permit safeguards and provides maximum protection to surrounding surface water by limiting the level of pollutants that may be safely discharged, regardless of the operational changes noted above. In fact, use of the injection well to inject leachate will reduce the amount of leachate discharged pursuant to River Birch's current water quality discharge permit. Thus, there is no additional impact to the environment as a result of these changes.

**Groundwater**

The proposed changes will not impact groundwater. The statements regarding the high level of protection afforded to groundwater by River Birch as set forth in the IT Responses accompanying Major Modification No. 7 are still equally valid. As stated above, the changes will not alter the type of pollutants introduced to the landfill. The facility possesses a leachate collection and groundwater monitoring system. The liner system surpasses all regulatory requirements. It is comprised of a one foot layer of recompacted clay, followed by a 40 mil HDPE liner bonded to a geosynthetic clay product ("GUNDSEAL"), followed by a 60 mil HDPE liner, a geo-net (for leachate collection) and 1 foot of sand. Finally, the entire site is underlain by an layer of clay that serves as an effective barrier between the waste and the groundwater in the area.

**Air Quality**

The proposed changes will not impact air quality. First, the additional volume created by the hurricane has not, at this time, caused an increase above presently permitted levels. Second, the facility possesses a Landfill Gas Collection and Control System that serves to minimize emissions to the atmosphere. In fact, the system constitutes Maximum Achievable Control Technology ("MACT") under all applicable federal and state regulatory standards. River Birch's Part 70 Operating permit was modified on October 2, 2006 to approve the system. Third, the facility may institute a Landfill Gas To Energy Project, upon final approval of the LDEQ. The latter two points are raised to highlight that projects currently in place or soon to be in place serve to maximize emission reductions and offset any increase in emissions (which are still below permitted levels) that may be caused by an increase volume of waste.

River Birch has also created and undertaken an extensive odor control program to minimize potential odor emissions from the landfill and the potential migration of odors into residential areas. After numerous and rigorous evaluations of several odor control technologies, the following programs are currently being utilized to manage and minimize potential odor emissions from River Birch:

- Installation of a high-pressure, perimeter misting system that provides a misting "curtain" between the landfill and residential properties north of the landfill. The mist contains a non-toxic, odor neutralizing chemical to increase the effectiveness of removing potential odor-causing chemicals from the atmosphere.
- Installation of a vertical-well gas collection within Cells 1-12 (Phases I and II). This system consists of 40 horizontal collection wells interconnected by a piping system which routes landfill gases to a flare system. Additionally this system collects landfill gases from 23 leachate risers, routing these gases to the flare system.
- Installation of a horizontal gas collection system consisting of eight collection pipes that collect landfill gases from portions of Phases III and IV. The gases are routed to the flare system. This system was voluntarily installed within an area previously identified as a possible source of odors.
- Continued implementation of rigorous daily and interim cover programs to minimize odors emanating from the working face and non-active areas.
- Routine monitoring of surface methane emissions, landfill gas wellheads, and leachate riser heads to ensure proper performance of the Landfill Gas Collection and Control System (LFGCCS).
- Installation of a weather station to monitor wind direction, temperature, and precipitation. The weather station provides real-time data used to notify operators of potential odor problems. Meteorological data is electronically downloaded onto a computer for historical comparisons of dates and time when odor complaints are reported.

Additionally, River Birch and Jefferson Parish Landfill cooperate on odor control issues and participate in weekly meetings to exchange ideas and discuss findings regarding each facility's odor control program. River Birch is continually evaluating new technologies and techniques to reduce odor emissions from facility operations.

### **Aesthetics**

The proposed changes will not impact the aesthetics of the facility. The facility, which is set back from Highway 90, is located in a specially zoned and designated solid waste disposal area and is surrounded by other such facilities. A buffer zone, which exceeds LDEQ's requirements, already exists. The new hours of operation will not create increased noise that could be expected to affect the area as the facility is well isolated, through buffer zones and set-backs, from population centers.

### **Safety**

The proposed changes will not create safety issues. A rigorous personnel training program exists such that all workers are well trained in the types of waste that may be received and the proper response to emergencies. The increased volume of incoming waste is still subject to inspection so that prohibited waste is identified, segregated, and removed from the premises. Finally, River Birch, as noted in prior IT Responses and permit applications, remains in close proximity to medical, fire, and emergency services, should those services ever be required.

## **2. Does a Cost/Benefit Analysis Demonstrate that the Social and Economic Benefits of the Facility Outweigh the Environmental Impact Costs?**

Yes, the social and economic benefits of the facility far outweigh any environmental impact costs.

As was seen above, the proposed changes are mainly operational in nature, brought about as a result of the hurricane and the need to provide current and future disposal services as efficiently as possible. The suggested changes produce only small, incremental impacts during times of high demand. To the extent the changes impact the environment in any appreciable way, existing operational and design features, existing permits, and updates to operational and other documents, such as the SWPPP, minimize any such impacts to the maximum extent possible. When these potential impacts are weighed against the benefits of the existing landfill, it is clear that the social and economic benefits outweigh any such potential costs.

Obviously, the landfill has a profound economic impact. Dr. Timothy Ryan, Dean of the School of Business and Economics at the University of New Orleans, previously provided a report, which is incorporated herein by reference, in which he pointed out that the facility produces over 100 million dollars in primary and secondary spending impacts and state sales taxes.



Further, Dr. Ryan pointed out that the landfill provides hundreds of jobs for local workers. With the advent of increased hours of operation, new employees will be hired for additional shifts, thus providing needed jobs in the post-Hurricane Katrina economy.

Finally, River Birch provides a fully permitted and environmentally sound disposal option for waste created by Hurricane Katrina. Hurricane debris may contain wastes that are not within the traditional definition of Type III waste, such as asbestos. As a Type I and Type II landfill, River Birch may receive industrial waste and asbestos, thus allowing more traditional Type III waste (i.e., construction and demolition debris) to proceed to traditional Type III landfills, such as the neighboring Highway 90 Type III Landfill. Thus, the existence of River Birch provides a fully permitted disposal option that is designed to receive the types of waste constituting 'hurricane debris' that do not fall within the traditional definition of Type III waste.

**3. Are There Alternative Projects Which Would Offer More Protection to the Environment than the Proposed Facility Without Unduly Curtailing Non-environmental Benefits?**

No. There are no alternative projects which would offer more protection to the environment than the proposed facility without unduly curtailing non-environmental benefits.

There are multiple other methods that could be employed to handle the anticipated volume. However, limiting the analysis to those reasonable modifications, such as those proposed herein, which relate to the primary goals to be achieved by the requested facility changes results in a more manageable number of alternatives to consider. Such a limitation is consistent with the "rule of reasonableness" that the Supreme Court imposed in its original decision in the Save Ourselves case.

Here, the proposed changes are necessary to fully respond to the ongoing situation and future emergencies and more efficiently accommodate future anticipated volume. In prior modifications, changes such as these were not pursued because the need for them was not yet fully realized, although it was recognized that some flexibility due to spikes in demand would be necessary. Hurricane Katrina and the massive amount of waste it produced has changed this perspective. The goals of the present permit renewal (i.e., institute procedures and practices necessary to quickly and efficiently respond to the current emergency, anticipated future volume, and possible future emergencies) are met by the modest changes proposed herein, none of which will significantly impact the environment in any appreciable way.

One alternative project is to take no action whatsoever. However, this is not a viable option. Although the LDEQ's Declaration of Emergency and Administrative Order, as amended, allows facilities to respond to the emergency, the Order will not be renewed at some point in the future. However, the volume of waste from demolition in the hurricane-affected area will contain the same materials presently constituting hurricane debris. For example, the demolition of older homes in Orleans and Jefferson Parishes will, in all likelihood, contain asbestos which, absent the Order, can not be

landfilled in a traditional Type III landfill. Thus, the proposed changes assist in insuring that River Birch will be able to efficiently handle the types of waste anticipated beyond those normally contained in Type III waste.

Another possibility is to institute new treatment and disposal technologies. However, such technologies can be problematic. First, as was seen by the hesitancy of federal and state authorities to implement the use of air curtain destructors, incineration of hurricane debris and asbestos-laden demolition debris has not been favorably viewed as environmentally protective. Second, certain debris 'shredding' operations were halted due to similar concerns. Third, energy creation from solid waste combustion has also not been favorably viewed due to the need to create and maintain an entirely new infrastructure to realize this new technology. In fact, there is no actual viable alternative to landfilling as new technologies must be sited, constructed, and properly operated. Such a task requires a major undertaking that involves far more resources and potential environmental impact than the slight changes proposed herein.

Finally, one alternative project already in place is waste segregation. As stated above, River Birch's neighbor, Highway 90, is a fully permitted Type III solid waste landfill. To the extent possible, only traditional Type III waste is sent to Highway 90, which preserves Type III landfill space and diverts asbestos and industrial waste to River Birch, which is properly permitted to receive such materials. LDEQ has often recognized the need to preserve landfill space for the appropriate types of waste. In fact, the 'synergistic' relationship between River Birch and Highway 90 was previously recognized and approved by LDEQ when it permitted Highway 90. Thus, River Birch, in partnership with Highway 90, already practices the alternative project of waste segregation.

#### **4. Are There Alternative Sites Which Would Offer More Protection to the Environment than the Proposed Facility Site Without Unduly Curtailing Non-environmental Benefits?**

No, there are no alternative sites that offer more protection to the environment than the proposed expansion site, without unduly curtailing non-environmental benefits.

River Birch is an existing facility.<sup>3</sup> As such, extensive alternative siting analyses have been conducted, submitted, and considered by LDEQ and the courts. By permitting River Birch initially, and approving subsequent expansions, LDEQ has already determined that there are no alternative sites that offer more protection to the environment. By upholding the permits issued by LDEQ, the courts have also indicated that River Birch is the site most suitable for solid waste disposal activity.

Relatively minor operational changes at an existing facility, such as the ones proposed herein, should not invoke a traditional and comprehensive alternative sites analysis. In terms of siting, nothing has changed since LDEQ's last approval of the facility. These operational changes are not an expansion of the facility's footprint (either

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<sup>3</sup> To the extent necessary, all prior alternative siting analyses and studies are incorporated herein.

vertically or horizontally). They are, as previously stated, operational changes designed to more efficiently handle waste.

**5. Are There Mitigating Measures Which Would Offer More Protection to the Environment than the Facility as Proposed Without Unduly Curtailing Non-environmental Benefits?**

The mitigating measures to be utilized at the, as set forth in the application for modification, prior permits, and prior applications, either meet or exceed all applicable regulatory requirements. To the extent necessary, they are incorporated herein. The mitigation measures incorporated into the design and operational plans of the facility demonstrates that there are no additional mitigation measures which would offer more protection to the environment than the facility as proposed without unduly curtailing non-environmental benefits. Some, but not all, of the mitigating measures include: the liner system, the leachate collection and treatment system, the SWPPP, landscaping and visual barriers, zoning, groundwater monitoring, a gas collection and control system, odor management, and locational characteristics.

**Part II: Changes Required Due to the Injection Well**

River Birch has received approval from the Louisiana Department of Natural Resources ("LDNR") to construct and operate a Class I non-hazardous waste injection well. Although the permitting of the injection wells is not generally an LDEQ matter, the subject of solid waste permitting actions, or the subject of IT Responses, it is mentioned herein because the injection well will be located on a small but segregated portion of River Birch's property and does provide environmental benefits.

The injection well was approved by LDNR in May, 2006. It will be located in the southwestern portion of the property. See River Birch's Response to LDEQ Comments, dated June, 2006, Attachment G, and subsequent Response to LDEQ Comments filed by River Birch. The well will be separated from the landfill by a berm. Water flowing from the landfill will not flow into the bermed area. Any rainwater falling into the bermed area will be injected. Thus, there will no surface water discharge from the area surrounding the injection well.

Primarily, the well will be used to inject leachate generated by the landfill. Additionally, it may also receive non-hazardous wastewaters from off-site. Prior to injection, the wastewater will proceed through one of two treatment 'trains,' consisting of eight tanks each to remove solids.

The injection well creates environmental benefits. First, a reduction in the amount of leachate that is discharged pursuant to River Birch's water discharge permit serves to reduce potential surface water impacts from the discharge of treated leachate. Second, the LDEQ recently approved an air quality small source exemption for the sixteen tanks that will handle the wastewater. The issuance of the small source exemption highlights that LDEQ views the operation of the injection well as relatively benign in terms of potential environmental impacts.

While the well will continue to be used as set forth above, and will continue to provide the listed environmental benefits, the 2.66 acres on which the wells are located was removed from the footprint of the solid waste landfill. See Letter, dated September 25, 2007, from Chuck Carr Brown to A. J. Ward. The operation of the wells will be fully subjected to the rules and regulations of the Louisiana Department of Natural Resources. The only difference is that the wells simply will not form a part of the solid waste facility.

## **CONCLUSION**

River Birch's renewal application should be approved. The landfill has provided, both before and after the hurricane, the highest quality of disposal services available anywhere with the absolute least impact to the environment possible. The renewal of its solid waste permit ensures that the high level of service to the area and the high level of environmental protection will be continued.